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ABSTRACT

The first in a series of health education modules for physically handicapped students (grades K-12) presents curricula for safety and survival education. An introductory section reviews descriptions and safety considerations for specific disabilities and discusses procedures for developing individualized health incentive modules in safety education. Eight elementary safety modules are presented: activities of daily living, traffic safety, school bus safety, water safety, fire safety, home safety, school safety, and outdoor safety. For secondary students, curriculum modules cover accident problems; safe behavior; and safety at home, school, physical and recreational activities, work, in driving, and in emergencies. Each module provides specific background information for nine physically handicapping conditions, and includes listings of concepts, student activities, and student self evaluations. Appended is practical information on transferring students from wheelchairs and coping with wheelchair obstacles. (CL)

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SAFETY AND SURVIVAL EDUCATION

INDIVIDUALIZED HEALTH INCENTIVE PROGRAM MODULES FOR PHYSICALLY DISABLED STUDENTS FOR GRADES KINDERGARTEN THROUGH TWELVE

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FOREWORD

I am delighted to congratulate the distinguished members of the Human Resources School faculty whose efforts and dedication over the last three years have culminated in the publication of these Health Education modules.

Health Education is one of the most important components of any school's curriculum. It is not enough for us to prepare our children to enter college or the world of work; we must prepare them to enter the arena of life equipped with a full understanding of their bodies and minds. Topics like mental health, family life, safety, and nutrition are as important to the growing disabled child as they are to the able-bodied youngster.

My responsibilities as Chairman of the White House Conference on Handicapped Individuals have given me a clear perspective on the status of the severely disabled in America's communities. Throughout the nation, states are enacting legislation to mainstream disabled children into neighborhood public schools. The modules will go a long way in preparing teachers in public schools in New York State and throughout the country to provide handicapped children with a proper health education.

Henry Viscardi, Jr.
Human Resources Center

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Kathryn D. Reggio
Project Director

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INTRODUCTION

The purpose of this project is to adapt the New York State Health Education Curriculum to the needs of the physically disabled student in grades Kindergarten through Twelve.

This module, Safety and Survival Education, is the first of five areas of health education which are being adapted to the needs of physically disabled students. The other areas which are being adapted are mental health, physical health, sociological health problems, and environmental and community health.

The curriculum development followed the topics and format of the New York State Curriculum in Health Education. On the recommendations of the consultants and the requests of teachers working with the students, the adapted curriculum has concentrated on concepts, student activities written as behavioral objectives aimed toward the student, student self-evaluations, and background information for the teacher.

Under each topic of the Safety Section of the New York State Health Education Curriculum, individualized health incentive program modules for physically disabled students from Kindergarten through High School have been developed.

It was found that the safety needs of the physically disabled students enrolled in Human Resources School fell into categories according to lack of function of the involuntary nervous system, paralysis or lack of feeling, muscle weakness, arm and joint stiffness, prosthetic limbs, brittle bones, diminutive size, cardiac problems, and bleeding. For this reason the disability categories were arranged for purposes of similar needs according to the following plan. (The modules apply to all the disabilities in each category, but the underlined disability is used as a representative of each category.)

1 Dysautonomia

2. Spina Bifida

   Post-poliomyelitis, Quadraparesis, Paraplegia, Hemiplegia, Spastic Paraplegia, Dystonia, Ataxia, Legg-Calve-Perthes Disease, Seizure Disorders

3 Muscular Dystrophy

   Amyotonia Congenita, Kugelberg-Welander Disease, Charcot-Marie-Tooth Disease

4 Arthrogryposis

   Rheumatoid Arthritis

5 Congenital Amputee

   Limb Deformities

6 Ostoegenesis Imperfecta

7 Achondroplasia

8 Congenital Cardiac Disorders

   Rheumatic Heart Disease

9 Hemophilia

   Thalassemia
   Sickle Cell Disease

INTRODUCTION

This curriculum is conceived of as separate modules for each topic. It has been printed and bound in two forms – the first, a limited number of the separate modules, and the second with the modules combined into bound booklets. This second form was necessitated by budgetary limitations. Human Resources accepted the responsibility of sharing the finished product with all the participating agencies, school districts, and consultants who cooperated with the committee during the project's development. This was possible only by binding the modules as booklets instead of packaging each one separately in its own packet or binder.

The suggested method of use is to have each student individually choose the topic he finds pertinent and follow the related activities and student self-evaluations.

The student's modules can be printed without the teacher background information.

The activities were designed for use with the severely physically disabled students at Human Resources School. The school has certain decided advantages for implementing a special health education curriculum:

1. A number of students with similar disabilities who can work together on related activities.
2. Accommodated rooms, furniture, shelves, elevators, automated doors, etc.
3. Specially adapted: library, swimming pool, gymnasium, stage, auditorium, cafeteria, art room, toilets, open classroom, home economics room, greenhouse.
4. Services of a physician, school-nurse-teacher, practical nurse, physical therapist, dental clinic, orderly, psychologist, speech therapist, and 200 volunteers.
5. Equipment: motorized wheelchairs, rolling litters, rolling stretchers.

The staff of the school has found that students who might otherwise be homebound can be physically accommodated. When the physical accommodations are provided, the intellectual and social needs can be taken care of. The health project committee does believe that although it was developed in a special setting this health curriculum also has a wider application to schools or classes having only a few students with physical disabilities.

Although the average school may not have all the suggested accommodations, the background information pages tell the teachers what their students with certain disabilities might be expected to do and what special needs must be considered in their health education.

School districts wishing to conform to the law mandating equal opportunity for education for the handicapped may be able to adapt their facilities on a smaller scale as the needs arise.

DISABILITIES GROUPED ACCORDING TO RELATED SAFETY EDUCATION NEEDS

* Definition of the Disability
** Safety problems related to the Disability

1 DYSAUTONOMIA –

*Genetic condition found in Jewish children of Eastern European extraction. Affects the function of the autonomic (involuntary) nervous system. Skeletal involvement, such as scoliosis, often occurs.

**Students with Dysautonomia may have the following problems: little or no tears, a labile body temperature and blood pressure, indifference to pain, absence of tastebuds, difficulty in expelling mucus from the lungs, development of scoliosis necessitating the wearing of a back brace.

2 SPINA BIFIDA –

*Spina Bifida – Congenital (existing from birth). Defect in the vertebral column characterized by the presence of a myelomenigocele (protrusion of the spinal cord and membrane covering it) both of which should normally be covered by vertebrae. Below the level of the defect, the child has diminished sensation of lower extremities, varying degrees of paralysis, and is incontinent of bowel and bladder.

*Post-Poliomyelitis – Poliomyelitis is an infectious disease affecting the motor cells in the spinal cord resulting in weakness or paralysis. There may be subsequent atrophy of groups of muscles, ending in contraction and permanent deformity.

*Quadriplegia – Paralysis affecting all four extremities.

*Paraplegia – Paralysis of lower portion of body – below waist. May be traumatic, infectious, or congenital.

*Hemiplegia – Paralysis of one half of the body – one leg and arm on one side.

*Spastic Paraplegia – Spastic paralysis occurring in early childhood. May be traumatic, infectious, or congenital. May involve cerebral hemorrhage before birth, or abnormal, involuntary movements of the muscles.

*Dystonia – Musculorum Deformans – Chronic motor disorder. May be hereditary. Marked by abnormal, involuntary movements of the muscles.

*Ataxia – Generalized term – usually involves poor coordination, lack of dexterity, unsteady gait, and slow speech. May be congenital or acquired.

*Friedrich's Ataxia – Progressive paralysis of lower limbs, ataxia, and speech impairment.

Legg-Calve-Perthes Disease – A disease of the head of the thigh bone which causes a degeneration and necrosis. This is followed by regeneration or recalcification. (hip area). Most often affecting boys between four and eleven years of age.

*Cerebral Palsy – The most common terminology used for children whose symptoms are similar to those with Ataxia. However, there is also a disorder of movement, posture, and coordination related to non-progressive damage to the brain.

**The major safety problems for a student with Spina Bifida are similar to those of students with Post-poliomyelitis, Quadraparesis, Paraplegia, Hemiplegia, Spastic Paraplegia, Dystonia, Ataxia, and Legg-Calve-Perthes Disease in the sense that they usually have limited or uncoordinated movement of extremities, or paralysis, and may wear braces, use crutches, or are wheelchair dependent.

3 MUSCULAR DYSTROPHY –

*Muscular Dystrophy – Hereditary disorder transmitted by females but affecting mostly males. Progressive generalized weakness of the voluntary muscles. Non-contagious, chronic wasting which leads to increasing infirmity, and ultimately death.

*Amyotonia Congenita (Oppenheim's Disease) – Born with generalized poor muscle tone. "Floppy." With or without muscle weakness. A descriptive term for many conditions. (Spinal Atrophy)

*Kugelberg-Welander Disease – a Neuro-muscular disorder. Weakness and atrophy (wasting) of muscles – slowly progressive.

*Charcot-Marie-Tooth Disease – Peroneal muscular atrophy. Hereditary neuro-muscular disorder. Slowly progressive muscle atrophy and weakness, starting in the legs.

**The major safety problems for a student with Muscular Dystrophy are similar to those of students with Amyotonia Congenita (Spinal Atrophy), Kugelberg-Welander Disease, Charcot-Marie-Tooth Disease in the sense that there is an unsteady gait when ambulatory, generalized muscular weakness, and they usually become wheelchair dependent eventually.

4 ARTHROGRYPOSIS –

*Arthrogryposis Multiplex Congenita – A congenital, non-progressive condition in which the tissues at some or all the joints are stiff and fibrous holding the limbs rigid in flexed or extended positions. The joint malformations result from immobilization of the developing embryo from any of a variety of causes which prevent normal spontaneous movements.

*Rheumatoid Arthritis – Disease in which inflamed joints are often accompanied by pain, swelling and limitations in joint movement and weakness of muscles.

**Students with Arthrogryposis and Rheumatoid Arthritis often have limitation in movement of their limbs, or fixed joints.

5 CONGENITAL AMPUTEE –

*Congenital Amputee – Children who are born with total or partial absence of a limb. (Also called reduction deformity.)

*Limb Deformities – Distortion or disfigurement of a limb.

**Students categorized as Congenital Amputees are those born without one or more limbs – and they often have safety problems similar to those with Limb Deformities in learning to use other methods of coping with the activities of daily living, and/or in using prostheses.

6 OSTEOGENESIS IMPERFECTA –

*This condition, also known as "Brittle Bones", is an inherited disorder of development in the skeleton in which the calcium content is far below normal. The bones are excessively thin and subject to multiple fractures following even mild trauma. Children are usually smaller in stature because fractures often occur in the long bones of lower extremities. Congenita: born with abnormalities and often many fractures. Tarde: Condition often not seen until the child starts to walk. Then fractures occur.

**Students with Osteogenesis Imperfecta, or Brittle Bones, spend quite a bit of time during their early years in casts and on rolling litters. They often wear bilateral long leg braces. As they progress into their teens they have fewer fractures.

7 ACHONDROPLASIA –

*Achondroplasia – Congenital frequently hereditary disorder in the conversion of cartilage to bone. Because of this, the growing ends or epiphyses, of the long bones of the limbs, are affected, and inadequate growth results in a type of dwarfism. Short extremities, but well-proportioned body. Lordosis (curvature of spine) often occurs, too.

**Students with Achondroplasia have problems because of diminutive size.

8 CARDIAC CONDITIONS –

*Congenital Cardiac Disorder – Born with a defect of the heart. This may involve a defect of the valves or it may involve the great vessels. Some of these can be be corrected by surgical procedures.

*Rheumatic Heart Disease – Injures the endocardium, the valve, or the muscle fibers. The valves may lose their original efficiency, so that passage of blood is hindered.

**Students with Congenital Cardiac Disorders or Rheumatic Heart Disease have similar needs to avoid stressful situations and exposure to extremes in temperature, and over-exertion, causing fatigue.

9 HEMOPHILIA –

*Hemophilia – Hereditary disorder transmitted by females but usually affecting only males. An abnormality in blood coagulation resulting in prolonged coagulation time and lowered prothrombin (clotting factor II) consumption.

*Thalassemia – Hereditary; genetically determined chronic anemia, causing poor bone growth, fatigability, nose bleeds, and low grade fever.

*Sickle Cell Disease – A hereditary, genetic condition of the blood which affects the red blood cells causing them to be malformed like a sickle. Occurs most often in blacks. Characterized by arthralgia, acute attacks of abdominal pain and ulcerations of the lower extremities.

**Students with Hemophilia, Thalassemia, and Sickle Cell Disease need to take similar precautions. They need to be wary of sharp corners, and to avoid bumps, bruises, and falls. In general they should avoid any activity involving bodily contact.

DESCRIPTIONS AND SAFETY CONSIDERATIONS FOR THE DISABILITIES

SUMMARY OF INFORMATION ABOUT DYSAUTONOMIA (1)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Dysautonomia – Genetic condition found in Jewish children of Eastern European extraction. Effects function of autonomic (involuntary) nervous system. Skeletal involvement, such as scoliosis, often occurs.

SYMPTOMS:

Lack of tears

Insensitivity to pain

Vomiting

Blotching of skin

Unstable temperature – fluctuations unrelated to infections

Unstable blood pressure

Emotional instability

Delayed development (Riley-Day Syndrome: late motor development, floppy appearance, tendency to vomit, some degree of pseudo-retardation due to lack of experience and exposure early in life)

HOSPITALIZATIONS AND TREATMENTS:

Nerve biopsies (nerves have areas without normal bundles)

Eyes: histamine and mecalin

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

PROBLEMS:

Corneal ulcers

Gastro-intestinal problems

Bladder problems – incontinence of urine

Skeletal system: scoliosis, deformities of long bones, embarrassment of respiratory system

Tendency to become fatigued easily because of weaker muscles, diminished respiratory function, lower endurance

Sleep often interrupted by URI or vomiting

Short life expectancy – death possible from aspiration, cardiac or respiratory failure, high fever, fluctuating blood pressure

RECOMMENDATIONS:

Therapy: derotation exercises for scoliosis, ROM and active assistive exercises, breathing exercises

Back brace if scoliosis is severe

Artificial tears to be administered several times daily

Quiet firmness on the part of teachers and others in authority; need for defined controls and limits

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH DYSAUTONOMIA

Because of insensitivity to pain, caution is needed about children putting fingers in doors, in touching radiators, and handling matches.

Occasional dizziness caused by labile blood pressure may require some time to lie down. High climbing should be avoided by these students.

Some students wear body braces to prevent scoliosis and problems of balance or tripping over clutter on floors can occur.

Lack of sensitivity to room temperature requires that the teacher encourage lighter or warmer clothing as the room temperature warrants.

Lack of tears necessitates caution against dust or eye irritants. Some student wear eye goggles which act as a moisture chamber. They usually also have (synthetic tears) eye drops administered by the nurse several times a day, on a physician's orders. These procedures should be conscientiously encouraged by the teacher to prevent ulcerations to the eyes.

They may also need to go to the nurse to use a respirator to expel mucus.

SUMMARY OF INFORMATION ABOUT SPINA BIFIDA MANIFESTA (2)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Spina Bifida Manifesta – Congenital (existing from birth). Defect in the vertebral column characterized by the presence of a myelomeningocele (protrusion of the spinal cord and membranes covering it) both of which should normally be covered by vertebrae. Below the level of the defect, the child has diminished sensation of lower extremities, varying degrees of paralysis, and is incontinent of bowel and bladder.

SYMPTOMS:

Myelomeningocele present at birth

Sensory loss and motor loss

Bowel and bladder incontinence

Hydrocephalus (enlargement of the head caused by improper circulation and absorption of cerebrospinal fluid) may develop any time after birth.

HOSPITALIZATIONS AND TREATMENTS NOTED IN RECORDS:

Closure of myelomeningocele shortly after birth

Shunt procedure to redirect cerebrospinal fluid into the heart, where it can circulate with the blood and reduce the possibility of hydrocephalus.

Periodic shunt revisions later in life

Periodic urological check-ups

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

PROBLEMS:

Occasional tenderness at area of myelomeningocele closure

Development of decubitus ulcers on buttocks

Pressure sores from braces

Development of lower extremity deformities

Urinary tract infections

RECOMMENDATIONS:

Therapy: ROM, PRE for uppers, ambulation training with appliances, swimming

Brace changes

Surgical procedures to allow ambulation without braces

Treatment of decubitus ulcers

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY PARENTS:

Change in behavior after shunt revisions

Embarrassment at bowel and bladder incontinence

Embarrassment at wearing orthopedic shoes (noted by teacher)

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH SPINA BIFIDA AND/OR PARALYSIS OF LOWER EXTREMITIES

The congential defect in the closure of the spinal canal causes students to lack feeling below the level of the lesion of the spinal cord.

Lower extremities may be insensitive to pressure, friction, pinpricks, and heat or cold.

No treatment will cure the paralysis or absence of sensation. Hopeful aspects are that in most instances, decubitus ulcers and deformities can be prevented, the child can become socially acceptable through a bladder and bowel training program, and he can usually learn to walk with the aid of braces and crutches.

Since walking with braces is a laborious procedure, a wheelchair for part time use may prevent excessive fatigue in traveling long distances. They should be urged, however, to assume a standing position, preferably once an hour, to increase circulatory and urinary stasis and to prevent development of hip and knee flexion contractures.

For students who ambulate with leg braces and using crutches, cautions include slippery floors, obstructions, and clutter. For students in wheelchairs cautions include architectural barriers, stairs, rainy or wet surfaces.

To overcome hydrocephalus, which sometimes occurs, causing abnormally rapid and excessive enlargement of the head, a shunt may be used to permit the cerebrospinal fluid in the brain to by-pass the point of obstruction. In this case special caution must be exercised to prevent injury to the head by falls or blows.

SUMMARY OF INFORMATION ABOUT MUSCULAR DYSTROPHY (3)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Duchenne Muscular Dystrophy – Hereditary disorder transmitted by females but affecting mostly males. Progressive generalized weakness of the voluntary muscles. Non-contagious, chronic wasting which leads to increasing infirmity, and ultimately death.

MEDICAL LISTING OF EIGHT STAGES OF FUNCTIONAL ABILITY

1. Ambulates with waddling gait and marked lordosis. Elevation activities adequate (climbs stairs and curbs without assistance).
2. Ambulates with waddling gait and marked lordosis. Elevation activities deficient (needs support for curbs and stairs).
3. Ambulates with waddling gait and marked lordosis. Cannot negotiate curbs or stairs, but can achieve erect posture from standard height chair.
4. Ambulates with waddling gait and marked lordosis. Unable to rise from a standard chair.
5. Wheelchair-independence: Good posture in the chair, can perform all activities of daily living from wheelchair.
6. Wheelchair-dependence: Can roll chair, but needs assistance in bed and wheelchair activities.
7. Wheelchair-dependence-and back support: Can roll the chair only a short distance, needs back support for good wheelchair position.
8. Bed Patient: Can do no activities of daily living without maximum assistance.

SUMMARY OF FINDINGS FROM SCHOOL RECORDS

For the general understanding of teachers or aides who might be working with a student with Muscular Dystrophy we have summarized the findings of the records of our 34 students who have Muscular Dystrophy.

EARLY STAGES–

SYMPTOMS–

Ambulates with moderate amounts of waddling and lordosis (bending backwards) with a heel-toe pattern

Ability to walk on toes but not on heels

Need to use rail or have assistance in going up stairs or climbing a curb

Complete independence in all activities of daily living

Deep tendon reflexes absent except for Achilles jerk

Normal range of motion except for tight heel cords

Bilateral hypertrophy of the calf

Tendency to fall frequently

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS

Encouragement to ambulate as much and as long as possible to prevent progression of deformities

Therapy–Active assistive exercies for upper extremities, exercises for trunk musculature, ROM (Range of Motion) of hips, knees, and ankles. All to prevent later deformities and to help maintain present level of function.

Lengthening of the heel cord and transplanting of tibial dorsum to allow ambulation for a longer period of time. (Can ambulate with braces or cast one week following surgery.)

MIDDLE STAGES–

SYMPTOMS–

Increased tendency to fall and inability to get up after falling

Final confinement to a wheelchair and dependence for activities of daily living except for feeding self and writing

Development of flexion contractures of both hips and knees and equinovarus deformity of ankles.

Severely limited range of motion in heel cord

Development of scoliosis (curvature of the spine)

Absence of deep tendon reflexes except for achilles jerk

Tendency to obesity

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS–

Continuation of therapy to maintain level of function and prevent further deformities

Sometimes braces to prevent deformities

Wheelchair when ambulation is no longer possible

Diet to control obesity

Disruptive behavior in school sometimes noted by parents and teachers

LATER STAGES–

SYMPTOMS–

Complete dependence in all activities of daily living

Inability to feed self or write as musculature of wrists and hands decreases

Round facial appearance with involvement of muscles of mastication (chewing)

Complete absence of deep tendon reflexes

Progression of hip, knee and ankle deformities

Tendency to obesity

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS–

Appliance to aid in writing and feeding self

Plastic sitting corset to prevent progression of scoliosis

Electric wheelchair

Diet to control obesity

Comfort aids, particularly specially made cushions to prevent pressure sores on buttocks

HOSPITALIZATIONS NOTED IN RECORDS–

Sometimes surgery for lengthening of heel cord (early stages)

Respiratory infections (later stages)

MEDICAL TREATMENTS NOTED IN RECORDS–

Surgical lengthening of the heel cord and transplanting of the tibial dorsum to allow ambulation for a longer period of time

Inhalation therapy

TESTS NOTED IN RECORDS–

Muscle biopsy, enzyme studies, etc. to determine carrier

Blood tests of parents to determine if disability is result of mutation or sex-linked characteristic

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH MUSCULAR DYSTROPHY

Progression of the disease requires an understanding of the problems at each stage so that they can be dealt with.

While the student is still in the early stages, increasing muscular weakness may cause him to drop suddenly. He is unable to stop himself and often falls straight down and rather hard. At this stage a securely and flatly carpeted room or area cushions the fall. Square-edge furniture, etc. can be minimized to avoid falling against them and sustaining injury.

When the student is in the middle stages and is starting to use a wheelchair out of necessity, his reactions to the situation are often displayed by angry words, perhaps swearing, striking out, spitting and, using chair as a "weapon." Safety hazards to other students at this time may be diminished by making provision for many activities which may be successfully achieved in a wheelchair, deemphasizing those for which strength is necessary.

When the student is totally confined to a wheelchair, carpeted surfaces are more difficult and exhausting to roll over, and independence is discouraged if he must often ask to be pushed. Since he should maintain arm function as long as possible by moving his own wheelchair himself, unnecessary obstacles should be minimized.

If the use of an electric wheelchair is available when the student is no longer able to push himself, its use gives the student a feeling of independence and achievement.

SUMMARY OF INFORMATION ABOUT ARTHROGRYPOSIS MULTIPLEX CONGENITA (4)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Arthrogryposis Multiplex Congenita – A congenital, non-progressive, condition in which the tissues at some or all the joints are stiff and fibrous, holding the limbs rigid in flexed or extended positions. The joint malformations result from immobilization of the developing embryo from any of a variety of causes which prevent normal spontaneous movements.

SYMPTOMS:

Underdeveloped due to basic disability; generalized underdevelopment of muscles and resultant muscle weakness

Absence of deep tendon reflexes

From birth – Flexion deformities of the hips, knees, wrists, toes; deformities of feet; dislocated hips

HOSPITALIZATIONS AND TREATMENTS:

Surgery to correct flexion deformities

Heel cord lengthenings and tissue releases

Bone fusions

Casting of hand to improve function (done when young)

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

PROBLEMS:

Development of scoliosis

Frequent abdominal complaints due to ulcers or ulcerated colitis (young adults)

Little functional use of hands – need for assistance in ADL's

RECOMMENDATIONS:

Braces – standing and ambulation with appliances if possible

Sitting corset for scoliosis (to prevent further progression)

Orthopedic devices for feeding and writing

No contra-indication for swimming

Therapy: Range of motion for all joints; active assistive exercises for uppers

Wheelchair for distance if necessary

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY PARENTS:

Assistance for ADL's

Daily therapy at home

Sitting corset difficult to handle

Pressure sores from braces

ARTHRITIS

Rheumatoid Arthritis – Cause unknown. Condition manifested by swelling of joints; characterized by early onset of muscle atrophy, particularly of interosseous muscles (those between two bones).

SYMPTOMS

EARLY STAGES

Fatigue, muscular stiffness, loss of appetite and weight, cold hands and feet, swelling of joints, nodules on skin.

LATER STAGES

Loss of joint motion resulting in flexion deformities and limitation in range of movement.

HOSPITALIZATIONS AND TREATMENTS

PHYSICAL THERAPY – ROM, active assistive exercises, progressive resistive exercises

Possible splinting of hands or other surgical measures

DRUGS – Aspirin, steroids (group of drugs related to cortisone which may be discontinued because of undesirable side effects), gold salts, and antimalarials (may bring about remissions after several months of treatment).

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

PROBLEMS:

Limitation in ADL, even restricting feeding and writing in some cases

RECOMMENDATIONS:

Diet, posture, avoidance of colds and dampness

No contra-indication for swimming

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH ARTHROGRYPOSIS

Arthrogryposis is characterized by stiffness of many or all joints of the extremities, combined with muscle weakness. Since these students cannot bend their arms at the elbows, heights of tables or desks can present difficulties for writing, or handling books or equipment, putting on coats or sweater, turning doorknobs. Feeding themselves may be a problem for them too. Special precautions must be observed in handling of matches and hot objects.

They would also have difficulty breaking a fall with their arms.

Since some also cannot bend their knees, they need assistance in sitting down and rising from a chair. The chair must be sturdy and of a non-sliding type to prevent falls. Help is best given by holding them under the arms while standing behind them. For these students, polished or wet floors are doubly hazardous and stairs are too hazardous. Their stiff-legged gait makes falls a constant possibility, and cluttered or bumpy floor surfaces are dangerous.

Crutches and braces are used by some Arthrogrypotic students. Some also use wheelchairs for traveling any distance. Modifications of architectural barriers should be adjusted accordingly.

Stiffened joints make participation in active sports difficult and adaptations must be made by the teacher to eliminate hazardous situations in which the student cannot lift his arms to shield his head from a blow nor move quickly to avoid injury.

SUMMARY OF INFORMATION ABOUT CONGENITAL AMPUTEES (5)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Congenital Amputee – Children who are born with total or partial absence of a limb. (Also called reduction deformity).

HOSPITALIZATIONS AND TREATMENTS:

Depending on extent of deformity, prosthetic limbs are fitted.

Sometimes a surgical procedure may be done to facilitate fitting of a prosthetic.

As the child grows, new fittings are necessary so there is a possibility of repeated hospitalizations throughout their lives.

SPECIAL PROBLEMS AND RECOMMENDATIONS MADE BY DOCTORS:

Make sure area of limb that fits into prosthesis is protected from skin breakdown.

When prosthesis gets too small rubbing can cause skin irritation.

Use these prostheses.

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF CONGENITAL AMPUTEES

Modern surgical and rehabilitation techniques have enabled children to use prosthetic arms and legs from their earliest years. Many physicians stress the importance of encouraging the student to use his prosthesis early to help develop good body alignment, and improve capacity for weight bearing and ambulation which will stimulate bone growth and prevent atrophy and secondary deformities.

The hazards in using a prosthetic arm are related to possible injury to the arm from matches, lifting excessive weight, etc. Caution must also be exercised to avoid hitting others with the prosthetic arm.

Students who have prosthetic legs need sturdy arm chairs to assist them in sitting and rising. Slippery floors, loose rugs, or clutter may cause them to lose their balance.

Since emergencies may occur at a time when a student is not wearing his prosthetic arm or leg, he also needs to learn to function without it.

SUMMARY OF INFORMATION ABOUT OSTEOGENESIS IMPERFECTA (6)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Osteogenesis Imperfecta – This condition, also known as "Brittle Bones", is an inherited disorder of development in the skeleton in which the calcium content is far below normal. The bones are excessively thin and subject to multiple fractures following even mild trauma. Children are usually smaller in stature because fractures often occur in the long bones of the lower extremities

Congenita: born with abnormalities and often many fractures.

Tarde: condition often not seen until the child starts to walk. Then fractures occur.

SUMMARY OF FINDINGS FROM SCHOOL RECORDS:

For the general understanding of teachers or aides who might be working with a student with Osteogenesis Imperfecta, we have summarized the findings of the records of our 14 students who have Osteogenesis Imperfecta.

SYMPTOMS:

Eyes – Blue Sclera

Teeth translucent with pearl-like appearance

Healed fractures, primarily of lower extremities

Bowing of long bones (Shepherd's Crook)

Short structure – disproportion between trunk and extremities due to frequent fractures

Megacephaly only apparent because of trunk size as seen in proportion to extremities

Generally underdeveloped physical appearance

Infantile behavior due to protection necessitated by brittle bones – infantile behavior in young children.

HOSPITALIZATIONS:

Fractures – some set in doctor's office; others requiring surgery

Rodding of femur and tibia to aid in the prevention of further fractures (some cases)

MEDICAL TREATMENTS NOTED IN RECORDS:

Calcitonin – Some cases

Therapy (various depending on each child)

A. Swimming
B. Ambulation training if possible
C. Exercise for ROM, muscle strength, etc.

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

Limitations set on Physical Education Activities

Fear of doctors and examinations

Immaturity and infantile behavior

Recommendations for therapy, rodding procedures, change in appliances or wheelchairs

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY PARENTS:

Fear of doctors

Fear of falling

Fear of fractures

Discomfor while in SPICA

Fear of being handled by people other than parents

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH OSTEOGENESIS IMPERFECTA

Students with brittle bones may sustain a fracture from even slight pressure or bumps. Special precautions must be taken not to pull or bend their arms while helping them dress.

They often wear body and/or leg braces and use wheelchairs for mobility. They should be discouraged from tilting backward in the chair or from engaging in physical activities which allow contact or fast wheeling.

Frequent fractures during the early years cause the child to be in casts and he often needs a rolling litter or wheelchair with an adjustable back. If someone pushes his wheelchair, caution is needed against jarring, bumping, or bouncing.

As these students progress into their teens they seem to have fewer fractures and often have strong arms. Some students can then manage limited ambulation on crutches. In these cases, precaution should be taken against slippery or cluttered floors.

The same students who have fewer fractures and strong arms can also engage in wheelchair games with the encouragement and supervision of their teacher.

SUMMARY OF INFORMATION ABOUT ACHONDROPLASIA (7)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Achondroplasia – A congenital disorder due to the conversion of cartilage to bone (frequently hereditary). Because of this, the growing ends or epiphyses, of the long bones of the limbs, are affected, and inadequate growth results in a type of dwarfism. Short well-porportioned body. Lordosis (curvature of the spine) ofter occurs, too.

SYMPTOMS:

Small size

Average achondroplastic attains a height of 50". Head is apt to be enlarged, although it appears relatively larger than it is because of small body size. Often bowing appearance to the legs.

Life expectancy is fairly normal.

HOSPITALIZATIONS AND TREATMENTS:

As they develop into middle life complications might possibly develop from their lordosis (abnormal curvature of the spine).

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

Biggest problem is adapting to a world of "normal" size people and being able to function in a world made for "normal" size people. This affects schooling, socialization, and employment opportunities.

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH ACHONDROPLASIA

Since students with Achondroplasia can usually use their arms and legs well, their only major safety consideration is related to their diminutive size. Their height compared to their peers' is so much shorter that they are liable to be knocked over in crowded halls.

High steps, curbs, and bus entrances might be a problem. Limited reach may cause climbing for books or equipment on shelves. Instruction in proper use of stools and ladders is therefore a special safety requirement.

The classroom shelves, doorknobs, and furniture should be adapted so that size does not hinder students from functioning efficiently in an emergency. Special planning might be required to eliminate unsafe situations in sports activities in which height is an advantage.

Properly fitted clothing becomes a special need, not only for style, but for safe participation in activities of daily living. By encouraging the student to consider the importance of proper clothing, the teacher is advancing his general safety.

SUMMARY OF INFORMATION ABOUT CONGENITAL CARDIAC CONDITIONS (8)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Congenital Cardiac Conditions – born with a defect of the heart. This may involve a defect of the valves or it may involve the great vessels. Some of these can be corrected by surgical procedures.

SYMPTOMS:

In some heart conditions children have cyanotic or bluish coloring to lips and nail beds, caused by lack of oxygen in blood stream.

Shortness of breath following a period of exertion

Generally smaller in stature

HOSPITALIZATIONS AND TREATMENTS:

Correction of defect

Treatment of complications of defect

Treatment of severe respiratory infection which might cause difficulty in breathing.

Often hospitalized for procedure to improve condition of blood.

Examinations of the heart (eg., catheterizations) to define exact area of defect.

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

More susceptible, probably to upper respiratory infections because of the way the body is affected by poor circulation and because of connection between heart and lungs.

Enlarged heart is common, because heart has to work twice as hard to accomplish its work.

Insufficiency of oxygen to brain may cause learning problems.

Problems related to circulation.

Extremes of temperature lower body resistance to infection. Therefore, air-conditioned building is better because temperature is more even.

May need to be more careful about overdoing.

Children with congenital heart disease are usually self-limiting in what they are able to do. This separates them from those who have an acquired heart disease and must be made to slow down and rest.

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH CONGENITAL CARDIAC CONDITIONS

Problems of students with Congenital Cardiac problems or Rheumatic Heart Disease may require avoidance of fatigue or tasks which are too physically demanding. Special rest periods or scheduled adaptations and a careful choice of extra curricular activities may be encouraged by the teacher according to the limitations placed on their activities by their physician. Some physicians find that for many cardiac children their activities are self-limiting and that constant reminders not to run, etc. may cause the child to worry unnecessarily. The teacher must balance cheerful encouragement with sensible caution.

Use of a wheelchair when traveling in school hallways may limit fatigue.

A safe, calm environment can avoid shock reaction from trauma or accidents.

Planning for a convenient arrangement of materials will conserve energy and eliminate accidents associated with fatigue or weakness.

Since rough or contact sports are usually inadvisable, the teacher can contribute to the student's alternative methods of participation in group activities which would satisfy his need to feel included.

SUMMARY OF INFORMATION ABOUT HEMOPHILIA (9)

For the general understanding of teachers or aides who might be working with a student with this disability, we have compiled a general summary from the records of the students at Human Resources School. This information represents a variety of findings, since each student has his own physician and may have attended different hospitals or rehabilitation centers.

Therefore, two important points must be noted. One is that each child is different, and so is the severity of his disability. The other is that medical procedures and recommendations are constantly advancing and changing, and these findings represent only a summary of the past.

Hemophilia – Hereditary disorder transmitted by females but usually affecting only males. An abnormality in blood coagulation resulting in prolonged coagulation time and lowered prothrombin (clotting factor II) consumption.

SYMPTOMS:

Hemorrhage occurring either spontaneously or after trauma (injury)

Joint swelling

Ecchymotic areas of skin (discolored areas where blood has escaped into the tissue)

HOSPITALIZATIONS AND TREATMENTS:

Blood transfusions

Local hemostatis (arresting of escaping blood by means of compression or tying off blood vessels with ligature)

Administration of antihemophiliac globulin and albumin (plasma proteins).

SPECIAL PROBLEMS NOTED AND RECOMMENDATIONS MADE BY DOCTORS:

Avoidance of any trauma; precautions as far as activities are concerned.

Swimming only after consultation with physician and swimming instructor.

Physical Therapy (ROM) in some cases, but prohibited in others because of resulting hemoarthrosis.

SPECIAL SAFETY CONSIDERATIONS FOR TEACHERS OF STUDENTS WITH HEMOPHILIA

Prevention is preferable to treatment of bleeding episodes.

A hemophiliac student often does not appear handicapped to the other students because he can walk without crutches or braces. He would receive no special consideration in crowds or on the playground. The teacher's watchful eye might discern ways of anticipating and avoiding situations which would be dangerous for him.

Sharp corners, scissors, pins, paper cuts, rough contact with others, bruises, blows, or falls may cause external or, more serious, internal bleeding which may require administration of the clotting factor.

Special caution should be advised against anything put in the mouth (like lollipop sticks or pencils, and even foods like fish or chicken containing splintering bones).

A special dentist is needed for dental care and tooth extractions.

Students should be taught to tell which factor they need and the name and telephone number of the doctor or medical center familiar with their needs in case of a bleeding episode. They should also be reminded to wear an identification tag containing this information.

Many physicians feel that over-emphasis on caution may cause psychological stress which also can become a problem in the lives of hemophiliacs. A sensible balance of precautionary preventive measures is needed on the part of the teacher.

Since participation in contact sports is inadvisable, alternative methods of participation, such as managing or reporting assignments devised by the teacher, would contribute to the student's safety.

PROCEDURES FOR DEVELOPING INDIVIDUALIZED HEALTH EDUCATION MODULES IN SAFETY EDUCATION AT HUMAN RESOURCES SCHOOL

1. The core committee composed three questionnaires which were given to the students, faculty, parents, and volunteer teacher-aides.

2. AAHPER Health Knowledge Tests and the Health Behavior Inventory were administered to pinpoint the content needs for each child.

3. The project committee, with the advice of consultants, decided to start with one of the five strands of the New York State Health Education curriculum and to work it through as completely as possible as a pilot unit this year. Survival and Safety Education was chosen because of its exceptional importance to physically disabled in the opinion of teachers and parents, and because of the worries expressed by so many students.

4. By reviewing the students' answers to the test questions related to this strand and then reviewing the results with the students, the teachers pinpointed needs for each child for each disability group and at each age level.

5. The Health Behavior Inventories served as a basis for choosing activities to improve health habits and attitudes by designing health-related activities with the cooperation of the students themselves. The students filled out requests for CBRUs which would help them achieve the goals they set for themselves.

6. Printouts from the Computer-Based Resource Units in Health Education were obtained from the New York State Computer. These guides considered the special learning interests, physical age and mental age of each child. Their disabilities, however, were not considered because this aspect of some children's needs is not programmed into the computer.

7. These CBRU guides served as a basis and departure point for developing more specialized units of activities, content, etc.

8. In addition, they devised additional objectives and activities which pertained to their particular disabilities. This was done on the basis of the:

   A. questionnaires they had filled out on their needs and interests,
   B. inventories they filled out on their health behavior,
   C. tests they had taken on health knowledge,
   D. review of their health records,
   E. recommendations of the nurse and physician.

9. In developing the activities, the students correlated health topics with all their subject matter learning. The teachers employed incidental health and safety instructions as a regular practice. They also endeavored to integrate health instruction with activities of daily living at home and at school.

10. By June they had developed this pil t topic into individualized modules with concepts, activities, self-evaluations and background information.

EFFECTS OF THE PROJECT

In addition to the production of a printed curriculum, the project had a significant impact on Human Resources School and the 200 physically disabled students attending it.

PARENTS SHARING OF PROBLEMS AND KNOW-HOW

Parents have shared with us the difficulties of coping with the activities of daily living which affect the health of their physically handicapped children. In addition, they have expressed their wishes about what they think their children should be taught and have made suggestions for improved methods of accommodating their children, so that their health could be maintained at a level which would enable them to attend school regularly and be able to concentrate and learn with minimum pain or discomfort.

They have told us how they cope with catastrophic ills and manage to keep their children's mental and physical health at a level ranging from fair to excellent.

Their optimism is reflected in their assessment of their children's adjustment mentally and physically.

IMPROVED ASSESSMENT OF NEEDS

The additional personnel time made possible by the project has enabled the school to evaluate each student more completely by test, inventory, questionnaire, record review, and personal interviews.

IMPROVED COMMUNICATION AMONG ALL WHO WORK WITH THE STUDENTS

The physician and nurse have reviewed the physical health needs of each child with the project staff and with all members of the faculty.

There have been special meetings among the nurse, physical therapist, gym, and swimming teachers and project staff to apply the health needs of these students to their activities and to coordinate their gym, swimming, and physical therapy with the findings of the physician and the project staff.

Faculty and volunteers have increased communication – teachers by informing the volunteers more fully about the children's disabilities, and volunteers by contributing ideas and suggestions about how to accommodate the children's many small physical problems so that their learning can proceed under more favorable conditions.

INCREASED INVOLVEMENT OF STUDENTS

The students themselves have increased participation in their own program by sharing their needs through the questionnaires and personal interviews and by discussions in class.

The emergence of personal experiences to serve as object lessons has been an unanticipated addition.

The students and their parents have participated in planning individualized programs which relate to their physical disabilities as well as their abilities, interests, age, and mental maturity.

NEW IDEAS FOR MINIMIZING HEALTH PROBLEMS HAVE EMERGED

Students, teachers, and volunteers have shared methods of accommodating children with physical disabilities so that their health problems might be minimized. These are listed in our modules and constitute an important contribution to our curriculum.

INCREASED FEEDBACK ON RELEVANCE OF HEALTH EDUCATION CURRICULUM AREAS TO THE DISABLED

All have been given an opportunity to express their opinions on the needs of the physically disabled for particular units of health education and to rate the priorities for each student among the 17 units listed by the State of New York.

Concommitant needs have been highlighted through parent and student feedback. Many have expressed a need for coordinated information to families of handicapped children about:

a) physical activities for handicapped children in the home
b) advice for the physically handicapped adolescent
c) a directory of health related agencies
d) recreation and leisure time activities
e) lists of public buildings which have access ramps and which have eliminated architectural barriers.

INVOLVEMENT OF ENTIRE FACULTY

On the elementary level the entire faculty became involved in helping to develop the activities and background information. After having interviewed the students and helping them to fill out their health questionnaires, and then participating in further in-service meetings with the physician and school nurse-teacher, the elementary teachers all voluntarily contributed time to suggesting ideas for learning activities from which the students could choose to reach their learning goals. They also participated whole-heartedly in working with the students to help them develop safety units in their areas of interest.

KNOWLEDGEABLE SOURCES TAPPED FOR BACKGROUND INFORMATION

On the secondary level, the teachers of home economics and driver education contributed suggestions for incorporating these areas into the curriculum for the physically disabled. The experiences of Abilities Inc., a self-supporting business which employs the physically disabled, served as a laboratory of information about safety at work.

COMMUNITY COOPERATION

The health project has resulted in greater cooperation between the school and community. A few examples include:

Tours, workshops, seminars, and cooperative joint projects with educational, medical, mental health and professional groups.

Health team participation in a workshop on health education conducted by Nassau County BOCES for the Parents & Teachers Associations of Nassau County.

Intervisitation of Human Resources School with a local high school and with a local junior high school.

Health projects exhibited at the school health-science fair to which local students, guests, and newspapers were invited.

QUESTIONNAIRES HEIGHTENED AWARENESS

The questionnaires had a two-fold purpose:

1. to obtain information
2. to give information by making the parents aware of the possible accommodations that should or could be made for their children.

We asked parents to check off from a list which special accommodations had been made for the safety of their children and what equipment they had and used for their children. We had composed the lists of accommodations and equipment as an information list of what is available.

On the teachers' questionnaire we asked them to check off what special school accommodations they used and what equipment they used. This also served to heighten awareness of what might be available.

EVALUATION

Ongoing evaluation and revision was done on each module.

The units included in each module are those evaluated by the teachers, students, and parents involved and given a rating of good (3), very good (4), or excellent (5), on the following items:

Relevance in fulfilling assessed needs

Helpfulness in improving students' health knowledge

Productiveness in establishing more positive attitudes

Motivation in developing good health habits

Evaluation of student learning was done by the students themselves by performance of the student self-evaluation activities. These activities gave each student the opportunity to demonstrate what he had learned in an enjoyable, non-competitive way.

The self-evaluation activities included in column three on each page are the ones rated good (3), very good (4), or excellent (5) by those who worked with them.

In addition, a student checklist self-rating (see appendix) of their understanding of safety knowledge indicates that 89% to 98% of elementary students and 83% to 98% of secondary students rated their knowledge as good or very good as a result of the modules. In rating their safety behavior 83% of the elementary students and 50% of the secondary students said they were now more careful. (See Tables 1 and 2)

Behavior is notably more difficult to change than is knowledge. In some cases the students were unable to influence others who had control over their safety and thus did not feel that they had the power to be any more careful than they already were.

Further indications of improvement as demonstrated on the standarized AAHPER Cooperative Health Education Test and the Health Behavior Inventory (Yellen and Johns) will be summarized in the final project report.

TABLE 1

ELEMENTARY GRADES

SELF-RATING OF SAFETY KNOWLEDGE

		VERY GOOD	GOOD	NOT TOO GOOD
1.	Activities of Daily Living	49%	44%	7%
2.	Traffic Safety	57	37	6
3.	Bus Safety	69	29	2
4.	Water Safety	62	32	6
5.	Fire Safety	60	29	11
6.	Home Safety	68	29	3
7.	School Safety	66	31	3
8.	Outdoor Safety	60	37	3

SELF-RATING OF SAFETY BEHAVIOR

MORE CAREFUL	SAME	LESS CAREFUL
83%	17%	0%

TABLE 2

SECONDARY GRADES

SELF-RATING OF SAFETY KNOWLEDGE

		VERY GOOD	GOOD	NOT TOO GOOD
1.	Accident Problems	45%	53%	2%
2.	Safe Behavior	38	48	14
3.	Safety in the Home	61	34	5
4.	Safety in the School	54	40	6
5.	Safety in Physical and Recreational Activities	47	40	13
6.	Safety at Work	42	50	8
7.	Safety in Driving	47	36	17
8.	Safety in Emergencies	47	51	6

SELF-RATING OF SAFETY BEHAVIOR

MORE CAREFUL	SAME	LESS CAREFUL
50%	50%	0%

GUIDELINES FOR USING THE MODULES

The disability named first in each category is the one referred to in that module. Teachers and students could use the activities of the module for any of the other disabilities listed under the first one.

Each module adapts pertinent topics of the New York State Health Education Curriculum. Many activities were deemed suitable for several disabilities However, differing reasons or background information were explained in the background information meant for the teacher.

The elementary topics are: Activities of Daily Living, Traffic Safety, School Bus Safety, Water Safety, Fire Safety, Home Safety, School Safety, and Outdoor Safety.

The secondary topics are: The Accident Problem, Safe Behavior, Safety in the Home, Safety in School, Safety in Physical and Recreational Activities, Safety at Work, Safety in Driving and Safety in Emergencies.

This program builds in the incentive by incorporating student self-evaluation activities and by using a number of motivational procedures such as role-playing, dramatizations, games, demonstrations, multi-media projects, and field trips. In addition contact with other learning areas is achieved by integrating language arts and creative arts activities and by encouraging organizational representatives to bring the community to the students. The three columns on the right-hand page are directed toward the student, and the student activities and student self-evaluations are written in terms of behavioral objectives. Only the teacher's module contains the background information on the left-hand page.

In other words, a functional view of the health curriculum was adopted. The health education curriculum has been defined as all of the experiences to promote learning which the pupil has under the guidance of the school, including in-class and out-of-class experiences. Here, the various studies, organized activities, and the entire life and atmosphere of the school are part of the curriculum. A number of these experiences are listed as student activities. These should be regarded as merely suggestive and as a starting point for creative elaboration. The modules are individualized as to disability. Selection may be made within the module for appropriate needs and interests. It is believed that student self-evaluation provides the greatest incentive for learning and leads to a stronger desire to improve. Curriculum experiences and evaluations are organized around the central motivating device of pupil needs and interests. In this way, attitudinal and behavior changes are sought to originate with the students themselves.

Reasons for including concepts and activities suitable for Kindergarten through Grade 6, and Grade 7 through Grade 12 without further dividing them into grade levels are:

1. Prolonged absence of physically disabled children often coincides with the time at which an important concept might be taught. An older student who had never studied certain essential safety needs because of absence in a previous grade needs to have the opportunity to learn important rules whenever he can.

2. Since the modules are to be used individually, the student, with teacher guidance, should be given the full range of concepts and activities so that he might find the incentive to choose those that are the most individually meaningful to him.

3. The social maturity of the student often determines his interest in certain activities. A student of intermediate grade age who has not had social opportunities because of confinement at home after operations, etc., may need to progress through some primary level activities. He can choose one that suits his interest level without a stigma if it is not relegated to a primary booklet.

The child with a crippling or special health condition which constitutes a serious physical disability will, in comparison with his disabled peers, succeed in academic, social, and practical activities of daily living in direct proportion to his determination, optimism, and support from parents and teachers.

Safety education should encourage a positive approach by emphasizing *ability* in the concept. The positive approach, it should be noted, should not overshadow honesty about the special hazards faced by a person with a physical disability. Realistic self-appraisal is necessary. However, by adopting an attitude which emphasizes pre-planning, coping, recognizing alternatives, taking the initiative, and accepting responsibility for his own safety, the teacher and all who communicate with the disabled can help him toward relative independence through safer habits and attitudes.

Special problems create urgent reasons for the study of safety education by the physically disabled student. Safety problems can be caused by heavy braces, casts, crutches, wheelchair, or artificial limbs, or devices. Disability-related safety problems might also include painful joints, muscle weakness, lack of balance, lack of feeling, uncontrollable muscle responses, brittle bones, inaccurate perception of spatial relations. These problems enlarge or aggravate the dangers of outdoor environmental hazards such as slippery weather conditions from rain, snow, or ice, wind, storms, natural disasters, man-made disasters. Even distances to be covered and street crossings can become environmental hazards.

Eagerness to be accepted socially may cause a student to disregard normal caution, to over-exert, to engage in recreational activities which are dangerous to his safety, or to dress or act in a way designed to achieve approval from his peers regardless of the danger.

School can lead the way in providing a hazard-free building environment. This should include: areas free of sharp projections, wide corridors, covered radiators or heaters, furniture weighted against tipping, securely attached wall fixtures and book cases, flat thresholds, ramps as an alternative to steps, elevators, accessible and usable emergency exits, covered outdoor entrance sidewalks, sturdily fastened handrails, and non-slippery floor surfaces.

Education can lead the way by helping students to adopt safe attitudes and behaviors.

SOME RECOMMENDATIONS FOR SAFETY EDUCATION FOR THE PHYSICALLY DISABLED

1. Adopt a positive, "can-do" attitude and avoid over-protection.
2. Involve the student in identifying and recognizing the hazards in daily living faced by every young person, since young people often adopt a "devil-may-care" attitude toward danger.
3. Teach the special areas of potential hazard to a person with a physical disability, such as clutter, room arrangements, crowds, architectural barriers, unsafe or unavailable toilet facilities and mobility problems.
4. Teach the student how to adapt to the inconvenience and special dangers of a wide variety of environments.
5. Encourage him to take the initiative in locating and using existing adaptations and then to develop new devices and adaptations helpful to him and others.
6. As a basis for safer attitudes and behaviors, develop a knowledge of important safety regulations, with understandings of the reasons for their promulgation, and their application to the individual student.
7. Accent development of new skill, through proper instruction and practice, which will elevate self-concept.
8. Involve the student in learning how to identify sources of necessary help and to accept help graciously and unashamedly.

SOME GENERAL GOALS FOR PHYSICALLY DISABLED STUDENTS INCLUDE:

1. Stimulation of the use of the intellect by enriched, adapted materials and avenues of approach, and creative teaching on the appropriate level which will give success experiences.
2. Stimulation of new interests for leisure time activities.
3. Elimination of architectural barriers.

SPECIAL SAFETY GOALS ARE:

1. Acceptance of responsibility for one's own safety.
2. Involvement and participation in the safety of others.
3. Desire to practice safety precautions in daily activities.

Elementary Safety Modules

Elementary Safety Module

Activities of Daily Living

General – Hoyer lifts are used for: car lifts, bathroom lifts (tub), traveling lifts (lightweight, easily taken apart).

When using a hoyer lift, follow these safety rules: (a) be sure student is properly placed on sling before lifting up, (b) make sure chains are in correct holes of sling to have proper balance. Two holes on each side, two holes at head or top of sling, and two holes at bottom of sling (under thighs).

ONE SUGGESTED PROCEDURE FOR TRANSFERRING:

a. Move wheelchair parallel to the other seat
b. Swing foot rest away or remove feet from foot rests
c. Lock brakes
d. Remove arm rest nearest to other seat.
e. Slide hips to side of wheelchair nearest other seat.
f. Push down on your arms, lift hips off wheelchair and slide over to other seat.

Children vary their method of transferring according to their disability or according to what they have been taught by their therapist. Many children learn to transfer by using a "sliding board".

2. **Spina Bifida** – Many children wear diapers and when they have to be toileted and their diapers changed they should transfer from their wheelchair to a bed or couch to be changed. For some children it is easier for them to transfer, using the same method, onto a toilet. The child's arms are strong and should be able to do most of the transferring. These exercises can help develop the muscles in the upper areas of the child.

3. **Muscular Dystrophy** – When the children have progressed to the point when they can no longer use their arms to transfer themselves, then a Hoyer Lift should be used–DISCOURAGE LIFTING OF ANY STUDENT BY ANOTHER PERSON. Students with M.D. can acquire a Hoyer Lift and appropriate sling through the M.D. Assoc. (local chapter). A doctor's prescription is required by MDAA for all necessary equipment.

4. **Arthrogryposis** – If student uses a wheelchair.

5. **Congenital Amputee** – If one or both lower limbs are missing the student can develop his uppers so that he is able to transfer in and out of his wheelchair.

6. **Osteogenesis Imperfecta** – Elementary students are very fearful of being moved. Therefore, learning to transfer is a very slow, gradual process and often not done until they are teenagers when the bones are less likely to fracture.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Transferring		
1. There is a safe and correct way to teach others how to use a hoyer lift.	1. Invite school physical therapist to demonstrate the use of a hoyer lift.	1. From his instructions, make a poster illustrating how to use a hoyer lift. Have your teacher evaluate you on your thoroughness in instructing someone using your poster.
	2. Make a list of safety rules to follow when using a hoyer lift.	2. Illustrate cartoons to show do's and dont's to follow when using a hoyer lift.
2. There is a proper way to transfer yourself from a wheelchair to a flat surface, eg.: car seat, bed, couch–chair, toilet.	1. Invite school physical therapist or SNT to demonstrate how student can transfer: (A) alone, (B) with some assisting by holding onto back of waist band, (C) use of a sliding board, and (D) proper placement of wheelchair next to surface.	1. Have physical therapist, SNT, or classroom teacher evaluate you on your ability to safely transfer yourself from your wheelchair to another chair, either alone, if physically possible, or with aid.
	2. Practice the following exercises on the floor: (a) lying flat on your stomach, do a modified push-up to strengthen your upper limbs; place both hands palm down in front of you and push, lift front part of your body off the floor. (b) crawling on forearms forward (to change location on the floor). (c) practice lying down and sitting up. (d) roll from side to side.	2. Make a chart showing the number of exercises you complete each day of the week.
	3. Practice the following exercises in a sitting position while in a wheelchair or in a chair: (a) place hand palm down at side or on arm rest, push, trying to lift bottom up. (b) same position as (a) push right hand then, left shifting weight from right to left. (c) same position but on floor, practice moving forward and backwards.	3. When you are ready, demonstrate for your class and teacher, your ability to transfer yourself from your chair to another chair or a bed.

2. **Spina Bifida** – Incontinency is the inability to control the bowel and bladder functions. Constant dribbling of urine causes odors and skin irritations if the child's diapers are not changed every two or three hours, and the child's skin is not washed thoroughly with soap and water. If a "collecting device" is worn by the child, this also has to be emptied every two to three hours to avoid an odor. The bags or devices are changed frequently and thoroughly washed between uses. These collecting devices vary with each child.

Crede is a method used to manually empty the child's bladder to prevent urine accumulating in a neurogenic bladder so as to reduce the chance for infection developing. A gentle but firm pressure with tips of fingers is applied directly over the bladder (mid-lower abdomen) and a *downward* stroke is made toward the pubis.

Many children wear diapers and are toileted every two to three hours at which time their diapers are changed. They should transfer out of their wheelchair onto a flat surface, (bed, table, etc.). Some children can transfer to the toilet. Encouraging the children to transfer themselves will help to develop their arm muscles and provide a form of exercise for their whole body.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Toileting		
1. The problems involved with incontinence may include odor and skin irritations which may be a health hazard.	1. Invite SNT to discuss the importance of good hygiene, talk about odors and explain what will happen to your skin if you neglect ulcers that may develop. Also during this period of time engage in a question and answer period with the nurse on any problem of incontinence you may be having. Request that boys and girls meet separately if the group desires.	
2. It is important to properly care for your collecting apparatus.	1. Have sessions with the nurse to learn the way your apparatus works; to learn how to wash out the urine bag; to learn why, if the urine becomes too much for the bag, it may start backing up and cause infections in surrounding area. Also, learn how to tell the color of your urine whether you already have an infection or not. The nurse should explain this to you.	1. Assign buddies who will help each other in being aware of an offensive odor from poor hygiene.
3. There is a correct method to crede – (the method used to manually empty your bladder).	1. Have sessions with the nurse who will explain and demonstrate the process of manually controlling the bladder. You will learn how to relieve the bladder completely so that the risk of infection is minimal. You should also discuss with the nurse any problems you have encountered while using this method and how they can be overcome.	

General – Proper care and maintenance of braces, shoes, crutches, and walkers is important in eliminating safety hazards. Check-ups should be made: loose screws, broken locks, missing parts or malfunctioning of these appliances.

8. **Congenital Cardiac Conditions** – Children with congenital cardiac conditions should learn to conserve their energies. In some instances using an electrical appliance may lighten the work load.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
C. Use of Appliances		
1. Appliances can become safety hazards if not properly cared for: i.e.: Braces Shoes Walkers Crutches Wheelchairs	1. Suggest ways in which the following can cause accidents to you or your fellow classmates: (a) braces (b) shoes (c) walkers (d) crutches (e) wheelchairs	1. Make a checklist of steps to follow to keep your braces, shoes, walkers, and/or wheelchair in excellent functioning condition. See Appendix for specific information on "Caring for Mechanical Braces" and "Care of the Wheelchair".
	2. Discuss any experiences you have had with accidental injuries caused by faulty braces, crutches, or walkers.	2. Discuss what should have been done to prevent these accidents from occurring, and what you can do to prevent their reoccurrence.
CONGENITAL CARDIAC CONDITIONS		
CCC-1. Electrical appliances can greatly conserve your energy and make your work easier.	1. Collect pictures of electrical appliances and for each write a sentence telling how it helps you and why it is beneficial to *you*.	1. Prepare a presentation for your class, demonstrate the use of a specific electrical appliance which you feel is of great assistance in making your work easier and saving your energy. Include the safety measures that must be followed when operating the appliance.

BACKGROUND INFORMATION FOR THE TEACHER

1. **Familial Dysautonomia** – Because of the labile temperature control it is important that the clothing be of light weight and porous material to avoid unnecessary overheating of their body.

2. **Spina Bifida** – Because of braces, crutches, and/or wheelchairs, proper clothing is necessary for ease of mobility. Clothing should fit loosely to get on and off easily over braces and should not be too long or cause tripping for the child who ambulates with or without crutches. Long blousey sleeves should be avoided because they can catch in the wheels.

3. **Muscular Dystrophy** – In the early stages of MD, the child's walk is unsteady, and he easily falls. Therefore, clothing which is too long is hazardous to him. Later on, when braces and a wheelchair become necessary, properly fitted clothing, not tight, and easy to take off and put on, is important for comfort and ease of dressing, as well as for eliminating hazardous complications.

4. **Arthrogryposis** – Due to braces, crutches, and/or wheelchair, proper clothing is necessary for ease of mobility. Clothing should fit loosely to get on and off easily over braces and should not be too long to cause tripping.

5. **Congential Amputee** – Due to artificial limbs, braces, crutches, and/or wheelchairs, it is extremely important for amputee children to have their clothing fit properly so that they do not have problems getting it on and off over artificial limbs and do not trip over them.

6. **Osteogenesis Imperfecta** – Due to braces, crutches, and/or wheelchairs, plus having bones which break easily, proper clothing is necessary for ease of mobility for these students. Clothing should fit loosely to get on and off easily over braces and should not be too long to cause tripping when the student ambulates.

7. **Achondroplasia** – Due to small legs, it is important to have his clothing fit properly, not too long, so as to prevent tripping.

8. **Congenital Cardiac Conditions** – Children with cardiac conditions should have clothing that is simple to put on in order to conserve energy and avoid fatigue.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
D. Clothing		
1. Proper clothing is necessary for safe and independent movement.	1. Discuss what types of clothing are suitable for your use with braces, crutches and/or wheelchairs and tell why. Discuss what styles would be hazardous and tell why.	1. Cut out pictures of clothing fashions and arrange on a bulletin board to show what styles are practical for you, according to your disability, and which ones would be hazardous.
	2. Write a letter to Fashion-Able requesting suggestions of styles for you to wear and where they can be purchased.	2. Using their suggestions, plan a wardrobe of fashions that you like, meet your needs, and are practical and economical.
	See appendix for listing of companies handling clothes for the disabled.	

2. **Spina Bifida** – These children have be be very aware of proper fitting shoes because they have diminished sensation and are not aware of a pressure area developing. The feet are often flail and shoes have to be put on carefully, making sure the toes are not curled which would cause a pressure area. Therefore emphasis on

(1) daily inspection of feet after shoes have been taken off,
(2) properly fitted shoes worn at all times,
(3) good foot care.

9. **Hemophilia** – It is important for children with hemophilia not to wear shoes that could cause them to trip, turn their ankles, or endanger themselves in any way.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Certain shoe types are safer than others.	1. Invite the school physician or SNT to discuss the best kinds of shoes children should wear.	1. Debate pros and cons of desirable shoes recommended by physician or SNT.
	2. Discuss reasons for choosing a particular shoe type. Prepare a debate for and against safer types of shoes.	2. Cut out pictures of shoes that are recommended and not recommended. Have groupings of each type on a display (poster, etc.) with captions like: "So soft on your feet" under the recommended shoes and "Why squeeze your toes and pound your soles?" under those not recommended.
	3. Search current literature on foot care and shoes (e.g. bad effects of platform shoes) which cause falls.	3. Find pictures of athletes in magazines. Make posters with slogans like: "Men like ________ wear high sneakers".
	4. Discuss the role of a podiatrist.	4. Same as above for desert boots. Find pictures of western heroes. (e.g. Winchester Man).
		5. Do an old-time play in time with flash lights to create illusion of fast movement. Show the fall resulting from inappropriate shoes.

General – In case of an emergency – students might have to be removed from a building via steps. In general, if possible, avoid moving motorized chair up and down steps because it is difficult due to the weight of the chair. Have no less than 4-6 people move it.

Some arm rests are detachable and when a chair is picked up they come right off.

1. **Familial Dysautonomia** – Since this student does not have overflow tears and is susceptible to corneal ulcers, special precautions should be carried out to minimize his exposure to foreign bodies, e.g., dirt on a windy day. The fact that there is not an abundance of tears means that anyone rubbing his eyes because of an irritant can cause injury to eye. There are artificial tears used by these children to help lubricate the eye ball.

If the student should fall when wearing a back brace, there is a possibility that he may injure his head or neck. Therefore, the student should take precautionary measures to prevent this from occurring. The type of brace used most commonly by children with Familial Dysautonomia is called a Milwaukee brace. The brace comes up to right under the chin, preventing the child from looking down. Therefore, any object on the floor is not visible, causing the child to trip and possibly fall.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
E. Moving a Wheelchair		
1. There is a correct way of moving a wheelchair up and downstairs, and you may instruct someone who is helping you and does not know the correct way to handle a wheelchair.	1. Ask someone to demonstrate while you explain procedure for taking a wheelchair up and down steps: a) *going up* – tip wheelchair backwards and pull up over curb (if more than one step, get assistance) b) *going down* – take wheelchair down backwards. Tip back and ease down gently over curb – letting wheel turn normally. c) If chair has to be carried up steps, DO NOT hold by armrests because some are detachable. Two people on back – on each side use handles on back of seat. Two people on front, on each side use part of leg rest.	1. Ask other classmates to make drawings and diagrams of your demonstration. Then correct or comment on them.
F. Personal Hygiene		
FAMILIAL DYSAUTONOMIA		
D-1. Trying to eliminate eye irritants in your environment can help lessen eye problems.	1. Discuss with the SNT the problems caused by irritation to your eyes and how you can better cope with it.	1. Make a checklist of things to do to help you avoid foreign bodies in your eyes.
	2. Invite class to discuss how they can participate in "good housekeeping" procedures in the class and why these procedures are important to safety and good health.	2. Set up a schedule of jobs for each student to take turns with to keep the classroom clean and safe. Be appointed for one of the jobs.
D-2. Special precautions must be taken when wearing a back brace to prevent accidents.	1. Invite SNT or physical therapist to discuss the hazards you should be aware of when wearing a back brace.	1. Draw cartoon illustrations to demonstrate some ways which accidents could befall you when wearing a back brace.
	2. Make a list of safety rules to follow to eliminate accidents when wearing your back brace.	2. Dramatize some do's and dont's of bodily movements and falls when wearing a back brace. (e.g.: the right way to fall when wearing a back brace and the hazardous way to fall, the right way to sit, etc.)

2. **Spina Bifida** – Because the children wear diapers and/or have an appliance, they must know how to keep themselves clean and avoid odors. If soiled diapers aren't changed, skin irritations can occur, and these take a long time to heal.

(See section on toileting for more detail on Spina Bifida)

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
SPINA BIFIDA		
SB-1. Bodily cleanliness is important for social acceptance and skin care.	1. Make a mobile – incorporating (as many as you can) ways to keep clean. i.e.: wash cloth, soap, can of deodorant, tooth brush, tooth paste, etc.	1. Make a checklist of things about yourself to consider for cleanliness then honestly evaluate yourself and learn what you can do to correct your problem areas.
	2. Discuss how and why skin irritation occurs.	
	3. Make a film strip on the correct ways of: 1) brushing your teeth 2) washing your hair 3) brushing your hair 4) washing your hands and face.	

9. **Hemophilia** – Good dental care is important for the child with Hemophilia because any dental work that might cause bleeding should be avoided. However, supportive therapy with a clotting factor can be administered during the time of dental treatment. Caution should be given to a child with hemophilia when brushing technique is taught. A gentle stroke is advisable rather than a hard, vigorous stroke that might produce bleeding gums.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
HEMOPHILIA		
H-1. Proper dental care is essential for you.	1. Discuss the importance of properly brushing your teeth often and thoroughly so as to prevent tooth decay or bleeding gums.	1. Make a chart illustrating the proper procedure to follow when brushing teeth. (e.g. a soft toothbrush, proper stroke: rolling down from gum margin to crown surface)
	2. Make a chart illustrating what a hemophiliac should do to prevent tooth decay.	2. Display chart on bulletin board and explain to the rest of the class.
	3. Draw pictures illustrating how "picking" your teeth or gums with sharp objects is very harmful to you as a hemophiliac. (e.g. toothpick, knives)	3. Display illustrations on bulletin board and explain them to the rest of the class.
	4. Research the importance of fluoridation of water in preventing tooth decay.	4. Present your findings to the class in the form of an oral report.
	5. Write a letter to the American Dental Association requesting information on what can be done for hemophiliacs who need dental care. (e.g. anesthetics, dressings, bite plates)	5. Discuss with your dentist what means he uses and/or is knowledgeable about, when he deals with a hemophiliac patient.

9. Hemophilia – Firm tone of the skin and muscles tends to reduce the chance of cutting yourself while shaving.

9. Hemophilia – The hemophiliac faces many frustrations in regard to athletics. So as not to make him feel left out or apart from his class, alternatives should be available to him to keep him involved with his peers. Encourage self-discipline in active games and in all activities where injury might result.

Such activities could include: swimming, walking, and gently running (on soft non-concrete surfaces with rubber-soled shoes), sit-ups and stretches, ping-pong and chess.

No competitive contact sports programs are recommended. There are alternate activities that a hemophiliac can participate in such as: school newspaper, school store keeper, manager of a team, etc.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
H-2. An electric razor is essential when shaving.	1. Draw a face on a blown-up balloon and then cover with shaving cream facial areas to be shaved. Carefully using a blade razor, proceed to shave the balloon until it pops.	1. Discuss why the balloon popped and why a blade razor is dangerous especially for a hemophiliac. Discuss alternative means of shaving with electric razor, and why this means would be much safer.
H-3. An appropriate athletic program can be planned for the hemophiliac who should understand the importance of avoiding activities where body contact occurs.	1. Invite school physician of SNT to discuss the type of athletic activity that can be beneficial for the hemophiliac.	1. Working with the gym teacher, coordinate an athletic program acceptable for a hemophiliac.
	2. Discuss what types of athletic activities a hemophiliac can participate in, as well as the activities which could be detrimental to you and why.	2. Collect magazine pictures of athletic activities and arrange them on a bulletin board under Do's and Dont's in Physical Education.

1. **Familial Dysautonomia** – Students lack taste buds and have an indifference to pain. Parents have to keep a sharper eye out for injuries than would be needed with normal children. Therefore, they must be able to judge the heat of something without actually having to touch or taste it, so as to prevent burning themselves.

Depending upon the age of the student and maturity level. (i.e. an adolescent) The student could give a description, etc. of his condition to the class to help them understand his physical condition. The opportunity for questions should be allowed.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
G. Eating		
DYSAUTONOMIA		
D-1. Special precautions must be taken when eating hot foods.	1. With your class discuss ways of telling how hot foods are without tasting them. (e.g.: steam over top of them, bubbling, etc.)	1. Make a bulletin board display showing pictures of foods which are normally eaten hot, and for each put a caption telling how to test the heat of them before eating without tasting them.
	2. Discuss with SNT the importance for you in knowing ahead of time how hot your food is. Ask her to explain to class the reason that you as a dysautonomic have an indifference to pain.	2. Demonstrate how you would tell whether or not something you were about to eat was too hot for you, using the following suggestions: a – soup b – hot chocolate c – grilled cheese d – pizza e – potatoes, etc.
D-2. Special precautions must be taken before handling objects which may be hot.	1. Discuss with your class ways of telling whether or not an object is hot without having to actually touch it.	1. Make a bulletin board of pictures of objects which can get very hot and warnings for each picture telling what to do first before handling the objects.
	2. Demonstrate the proper and safe way to handle hot pots and pans.	2. Cook a meal with the class, and have your teacher evaluate you on your safety measures when handling hot pots, pans, utensils and stove parts.

9. **Hemophilia** – Should not be overfed since an increase of weight in the form of fat will not be a "pad" against injury and will definitely put more strain on the knee and ankle joints.

The National Hemophilia Foundation
25 West 39th Street
New York, New York 10018

9. **Hemophilia** – Children should use caution when eating a lollipop or ice cream on a stick which could injure the roof of the mouth during a fall.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
HEMOPHILIA		
H-1. The quantity of food the Hemophiliac consumes must be regulated.	1. Write a letter to the National Hemophilia Foundation requesting information and pamphlets on a good diet for a Hemophiliac.	1. Plan a diet for yourself to follow (based upon information from students activities) and make a checklist for yourself in carrying it out.
	2. Collect magazine pictures of over-weight people and discuss the strain on the various parts of the body, caused by being over-weight. (e.g. legs, heart, etc.)	2. Discuss how being over-weight can be even more harmful to you as a hemophiliac (e.g. much strain on leg joints).
	3. Collect pictures of food which should be limited so as not to cause over-weight.	3. Place pictures in a booklet and give a title for it and display it on the bulletin board.
H-2. Certain types of food can be harmful to the hemophiliac.	1. Collect pictures of various types of food whose mechanisms can be harmful to a hemophiliac. (e.g. lollipops, ice cream pops, ice pops, pretzel logs, or sticks, drinks with stiff plastic straws) and discuss why these can be dangerous.	1. Mount pictures and hang them on a bulletin board display entitled "These Can Be Dangerous to You!"
	2. Write up a short puppet show about a little boy who comes home from school because his teacher took away his lollipop when he was playing in the school yard. Include what the mother explains to the child as to why his lollipop was taken away.	2. Make puppets and present your show to the class.
	3. Illustrate a comic strip about a small child (with Hemophilia) going into a candy store and the things he should consider when choosing his treat. (e.g. no lollipops, ice cream in a cup, rather than on a stick.)	3. Enlarge your comic strip onto a poster and display it in the school hall.

9. **Hemophilia** – Alcohol should be ingested in moderation since excessive amounts may produce irritation of the stomach which on occasion can lead to bleeding.

Cigarette – irritate throat
alcohol – irritates stomach
drugs – irritates throat and stomach lining and may lead to bleeding.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	4. Play a game of 20 questions, in which one student will choose a food which he considers dangerous to him and the others ask him 20 questions about the food, and after the questions have been answered, the other students try to guess what food he is thinking about.	4. Afterwards, explain why you feel the food you chose is dangerous to a hemophiliac.
	5. Prepare a discussion about your own experiences with certain foods which may either have speared, irritated or scraped your mouth and what you had to do for it.	5. Draw conclusions from your discussions and make a bulletin board emphasizing the main points you brought out (e.g. pictures of foods discussed with key words under them telling their danger or the harm they do. (e.g. lollipops – puncture spices – irritate, pizza – burns or scratches).
H-3. As an adult, you will need to be cautious with alcohol consumption.	1. Write a letter to the National Hemophilia Foundation asking for information concerning the hemophiliac and alcohol.	1. Write a summary presenting the information received and the reasons why alcohol can be especially harmful to you.
	2. The same activity as (1) above can be done for drugs and smoking and the hemophiliac.	2. Same as for above.
	3. Write a short play in which you are at a party and are tempted with alcohol, drugs, or smoking (one or all three) and in it include your reasons for declining them.	3. Assign parts of your play to other students and perform it to class or school.
	4. Make a display chart showing why cigarettes, alcohol and drugs are harmful to you as a hemophiliac.	4. Display chart in school lobby or hall.

9. **Hemophilia** – Fishbones could cause choking and internal bleeding from the puncture wounds.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
H-4. Severe choking while eating can cause bleeding.	1. Discuss dangers of bones and reasons for caution while eating fish.	1. Make a poster with cartoon characters discussing need for careful chewing of fish. (e.g. Snoopy and his dish with dialogue about eating fish.)
	2. Check with your doctor about possible danger foods other than fish.	2. Prepare a play between Charlie the Tuna and another fish – Bring out need for caution while chewing bony fish.
		3. Demonstrate method of carefully chewing and swallowing fish.
H-5. Unsafe use of utensils could cause injury and result in bleeding.	1. Discuss proper use of knives, forks, and spoons – ways to handle without causing injury to your mouth.	1. Make a film or slide presentation (snap shot sequence if no media equipment is available) on proper use of utensils.
	2. Write to authors of books on Hemophilia. Find out what to avoid when using utensils.	2. Eat a meal with the teacher, illustrating proper methods while eating.
	3. Observe people eating in a restaurant, noting dangerous habits (e.g. cutting toward self; chewing too rapidly, could bite cheek).	3. Prepare a poster of magazine pictures showing dangerous situations (e.g. person walking while eating a cup of ice cream). Prepare a report for the class on observations made at the restaurant.

General – See "How to Care for Your Wheelchair" in the appendix. It should be discussed and distributed to all wheelchair students.

SAFETY RULES

1. wear seat belts
2. keep feet up on foot pedals
3. arrange clothing and books so that they do not become tangled in spokes of wheels
4. put on brakes when stopped before getting out of wheelchair or when writing in a wheelchair at a desk or table
5. don't pop-a-wheely

General – The center of gravity is shifted if excess weight is put on foot pedals or on the back of the chair. (children standing on a wheelchair getting a ride)

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
H. Wheelchair Maintenance		
1. Proper maintenance of a wheelchair can prevent accidents.	1. Label a diagram of a wheelchair, showing important safety points.	1. Make a check list to follow to inspect these safety points monthly.
	2. Make a list of accidents which could occur because of faulty: a – brakes b – seat belts c – wheels or spokes d – foot pedals	2. Have a contest with your classmates for: (A) safest or best kept wheelchair (B) most beautifully (yet safely) decorated wheelchair.
	3. Invite SNT or physical therapist to demonstrate: a. how to open and close a wheelchair b. how to wheel a closed chair c. how to place a wheelchair in a car d. how to go up and down curbs, steps, and ramps.	3. Give a demonstration to aides, volunteers, or maintenance workers at an orientation workshop.
	4. Invite the medical supply representative to demonstrate how to: a. keep your wheelchair clean b. keep your wheelchair dry c. repair loose or broken parts d. protect your wheelchair from extremes in temperatures e. maintain adequate lubrication.	4. Establish an inspection station and elect an inspection committee to give monthly checkups on wheelchairs with emphasis on these points.
2. A wheelchair will tip if too much pressure is put onto the foot pedals.	1. Discuss ways that accidents would occur from pressure on foot pedals. Illustrate drawings to demonstrate them.	1. Demonstrate for the class, using dummies, the danger of putting weight on wheelchair pedals.

General – Aids for motion impairments offered by the telephone company include:

card-dialer

one-number dialer

speakerphone

headsets

touch-tone (push button)

trimline phone

7. **Achondroplasia** – Due to diminutive size having to overreach and overstep or climb, becomes a constant threat to the safety of the Dwarf. Therefore, whenever possible it would be better to lower bedroom furniture, shelves, closets, and even several chairs to make them easily accessible for these students.

Since the child usually has to contend with the "adult" size of his environment, he should know of safe ways to go about reaching objects that are too high above him.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
I. Maintaining Contacts		
1. Essential activities such as shopping, conducting business, making appointments, summoning help, and communicating socially can often be done efficiently and safely by telephone.	1. Write to the telephone company for their booklet on services for special needs. Read the booklet and discuss which adaptations would be especially helpful for your needs.	1. Ask your teacher or a student representative to call your local Bell Telephone business office to request additional information about any special problem not solved by the services described in the booklet.
J. Home Adaptations		
ACHONDROPLASIA		
A-1. Proper adaptation of environment, when possible, can eliminate safety hazards.	1. Draw a floor plan of your home and label all areas that represent safety hazards to you.	1. Suggest ways of adapting these areas to better accommodate your needs and, if changes are realistically impossible, suggest ways by which you could safely cope with existing hazards.
	2. Same as above, except for your school.	2. Same as above, except for your school.
	3. Illustrate drawings or take actual slides or pictures of architectural barriers for you in your community.	3. Discuss how you cope with them and safety procedure you need to follow.
A-2. There is a safe way of reaching objects which are too high for you.	1. Demonstrate the various means you could use to reach one of your toys which was placed on a shelf too high for you to reach.	1. Discuss which ways are hazardous and why and which way is the correct, SAFE way and why.

The student needing to prevent fatigue and over-exertion should always plan ahead and be organized, rather than having to run back and forth, unnecessarily wasting his strength and energy.

ie.: Child with a Congenital Heart Defect
Child who wears double-leg braces and uses crutches for ambulation
Any child with a problem in ambulation (walking)
Child who has Achondroplasia

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
K. Advance Planning		
CCC-1. Planning ahead can save energy and eliminate anxious rushing about for students with: Congenital Cardiac Conditions Double-leg braces Crutches Any ambulation problems Achondroplasia	1. Draw a floor plan of your home and mark out in RED the route you follow each morning when you wake up, get dressed, eat, etc., and leave the house.	1. Discuss any trips back and forth to the bathroom or bedroom, or other rooms, that you think could be eliminated from your daily routine if you planned ahead.
	2. Make a chart of your daily routines and estimate how much time you take in performing them. Estimate how much time of your average day is wasted due to lack of planning.	2. Reorganize your daily routine charts so that wasted time or unnecessary procedures are eliminated. Follow your new routine chart for a day and figure out the time you saved by planning ahead, that you use for rest and relaxation.
	3. Illustrate cartoons to demonstrate where you keep items that you use daily. Are they stored in a convenient spot for you?	3. Write an essay on the importance of planning ahead to save time and eliminate rushing, for your safety.

Elementary Safety Module

Traffic Safety

BACKGROUND INFORMATION FOR THE TEACHER

General

1. Most disabled students will have occasions to cross streets and must know traffic regulations.

2. These rules can also be applied to wheelchair and ambulatory traffic in school hallways to minimize accidents.

3. Many disabled students will learn to drive and will then apply these rules to auto safety.

2. **Spina Bifida** – As a potential driver, these children will have a good reason to study traffic regulations in depth.

3. **Muscular Dystrophy** – Electric Wheelchairs enable older, more helpless students to propel their own wheelchairs. Manual wheelchairs can be pushed by another person. Both ways make use of public sidewalks possible.

4. **Arthrogryposis** – Even though he may not be independent in his use of public streets the child should know how to propel himself across them so that he can direct others in assuring his safety.

5. **Congenital Amputee** – The child may be ambulatory or in a wheelchair, depending on the nature of his disability. He will most likely use public streets as a pedestrian, if not as a driver. Many will learn to drive in high school classes.

6. **Osteogenesis Imperfecta** – Less severe cases will allow wheelchair travel with relative independence.

7. **Achondroplasia** – These students may be able to drive; in such cases knowledge of traffic rules will serve as a basis for later studies in driver education.

8. **Congenital Cardiac Conditions** – The child may use a wheelchair to limit fatigue when traveling in school hallways.

9. **Hemophilia** – This child may use a wheelchair to protect himself against injury when traveling in public.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Traffic Signs 1. A knowledge of the basic traffic signs and rules is essential in accommodating the special needs of the physically disabled student.	1. Take a trip with the class and take color pictures of traffic signs. Make your own signs, copying the pictures as exactly as possible.	1. Present your signs to the class, telling what each means.
	2. Discuss what makes up a traffic situation (cars, streets, signs, pedestrians, etc.) and make your own map showing a traffic situation with you in it.	2. Have a little figure representing you move through the traffic situation while you tell the class why you are doing certain things.
	3. Make a "follow the directions" maze with labled streets and direction cards like "Wheel your wheelchair down Main Street."	3. Play the maze game with classmates, telling how the directions can be followed safely. Ask the teacher to act as moderator for the game.
	4. Make a list of all traffic signs you see on the way to school.	4. Set up traffic signs in the halls and appoint officers to see how well the class can obey them.
	5. Write and ditto off a rider's manual containing all basic rules as well as special rules for you when riding in a car, bus, etc.	5. Invite someone from the Motor Vehicle Department to come and read your manual and offer suggestions for additions. Ask your parents to list their suggestions about the needs of a student like you traveling.

General – Disabled children must be able to relate their needs to a stranger and instruct another person in the proper handling of their appliances as well as proper procedures for fastening seatbelts, etc.

Suggested titles for sheet:

(a) Why Use A Seat Belt? HERE'S WHY

(b) So You Don't Use A Seat Belt

1. **Familial Dysautonomia** – Due to weakened muscles the student may be unable to hold himself securely in his s eat while riding in a bus or car. Insensitive skin could easily sustain unfelt injury.

2. **Spina Bifida** – Because sensation is diminished in the lower extremities they could sustain injury that would go unfelt by these children. To prevent falling out of his wheelchair, e.g. if it is tipped or if someone crashes into it, the student should at all times wear a seat belt.

3. **Muscular Dystrophy** – Weakened muscles reduce sitting balance in the older child, so seatbelts are a must. Younger children who are still ambulatory will have difficulty bracing against a fall. In later stages children are unable to save themselves from falling out of their wheelchair if they are tipped or pushed over.

4. **Arthrogryposis** – The child may not have the movement needed to break a fall, so a seatbelt is a vital safety precaution for him. To prevent falling out of a wheelchair, e.g.: if it is tipped or someone crashes into it, the student should, whenever riding in a wheelchair, wear a seatbelt.

5. **Congenital Amputee** – Seatbelts are vital to the safety of the child who may not be able to break a fall. To prevent falling out of a wheelchair, e.g.: if it is tipped or if someone crashes into it, the student should, whenever using a wheelchair, wear a seatbelt.

6. **Osteogenesis Imperfecta** – Brittle bones makes proper seat belt procedures a must for these children. To prevent falling out of a wheelchair and perhaps breaking some bones, e.g.: when wheelchair is tipped or someone crashes into it, the student should at all times wear a seatbelt.

7. **Achondroplasia** – Short legs often do not reach the floor and cannot brace against sudden stops. Arms may not reach the dashboard or next seat to stop a fall. His head is dashboard height and quite vulnerable.

8. **Congenital Cardiac Conditions** – A minor injury could have a traumatic effect on a child, so seatbelts are even more necessary to protect him from harm.

9. **Hemophilia** – Padded seat belts are vital to the safety of this child, who must be protected against bumps or jolts from sudden stops.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Seat Belts		
1. Seat Belts are doubly vital to the *more vulnerable disabled student.*	1. Discuss types of seat belts and why they are *worn. Draw a picture of yourself with a seatbelt on* and write one reason why it is good to wear it. Draw a picture of a child not wearing his seat belt. Write an answer to this question: "Why would it be better for him to wear a seat belt?"	1. Take turns with class being monitor or police*man. Observe others in your bus group.* Report to class and ask class to help evaluate their use of seat belts.
	2. Have seat belts affixed to chairs or wheelchairs to practice opening and closing.	2. Ask bus driver to observe you for your skill in working with seatbelts or instructing someone else to do it for you.
	3. List ways a car and a bus are similar. Count the number of similarities you find.	
	4. Watch how people handle you and your classmates while in school and away from school.	4. Make a "good helper" chart listing ways of assistance you think are good and safe. (Include ways of helping ambulatory and wheelchair students.)
2. Seatbelts are essential to keep from falling out of a wheelchair.	1. Use a dummy to demonstrate what happens when a wheelchair tips over and the person in it isn't wearing a seat belt.	1. Prepare a slide or filmstrip presentation of the dummy presentation.
	2. Write an essay on why a seatbelt is important to *your* safety.	2. Draw up a fact sheet on the reasons for using a seatbelt at all times if confined to a wheelchair.

BACKGROUND INFORMATION FOR THE TEACHER

General – (1) The disabled child will have to rely on strangers for assistance if he travels alone and must be trained for such situations. (2) Children should be aware of appropriate strangers to ask if they need assistance. (3) Child should carry identification in purse or wallet. Thus, if in need of assistance and unable to verbally communicate he can present it to a stranger to read.

1. **Familial Dysautonomia** – His unstable emotional state will be helped by adequate preparation requiring decision-making.

2. **Spina Bifida** – Despite strong upper extremeties, this child will need some assistance in a world often inconsiderate of his wheelchair needs. Architectural barriers will necessitate aid from strangers.

3. **Muscular Dystrophy** – Older children are essentially helpless and may not travel alone, depending on the degree of dependence.

4. **Arthrogryposis** – Limited mobility may make independent travel impossible for the child, but he can learn how to direct those assisting him if an additional helper is needed to manage a curb, etc.

5. **Congenital Amputee** – The student will be dependent upon strangers if he uses a wheelchair alone on public streets.

6. **Osteogenesis Imperfecta** – Some children will be able to propel their own wheelchairs while others will be unable to do so.

7. **Achondroplasia** – The child must be made aware that strangers may treat him like a baby or at least be unaware of his real age.

8. **Congenital Cardiac Conditions** – Shortness of breath and dizziness may necessitate aid of strangers.

9. **Hemophilia** – A student who is wheelchair bound after an injury may need to rely on strangers for help.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
C. **Pedestrian Safety**		
1. The disabled student must exercise caution in approaching strangers for assistance or directions.	1. Discuss hazards of asking strangers for assistance and whom you should ask if you need help (e.g. policeman, fireman, traffic guard).	1. Collect pictures of people who can help us when we are in the outside world and mount them on a bulletin board display.
	2. Act out a short skit in which one student approaches another student, (who is a stranger) and ask him how he can reach a particular landmark.	2. Class will critically evaluate the skit, suggesting what should have been said and what could have been eliminated.
	3. Discuss what you should tell strangers about yourself and your wheelchair so they can assist you if you need it.	3. Write a short play about any instance in which you need to ask assistance from a stranger in the street. (Include how to ask and who to ask.)
	4. Build a community for Social Studies: take boxes for buildings, costume dolls for kinds of jobs people do. Discuss the kind of person you'd choose to help you on the street.	4. Play "needing help" game with classmates. Test yourself to see if your choosing the right kind of person. (Classmates can judge for you if your teacher permits.)
	5. Take a field trip to a shopping center. Talk about which people you'd choose to help you.	5a. Ask your teacher to judge you after you pick out one stranger to ask for help. 5b. Make a checklist of all the things you should ask yourself about picking him to ask for help.
	6. Decide what others must know about your disability in order to help you in case of emergency. Print on a card and affix to your wheelchair or put into a wallet.	6. Exchange disability fact cards with classmates. See if others can recognize your card and you theirs. Discuss how you can recognize who owns which card.

General – Although primary age children may be too young to comprehend and translate into personal use traffic regulations and precautions, many rules do apply to hall conduct and thus can be applied to the school environment.

1. **Familial Dysautonomia** – The immature, emotionally unstable child needs structure and clearly defined limits for behavior, and will benefit from strict guidelines.

2. **Spina Bifida** – The child will be able to drive a car in later years, so knowledge of traffic regulations will be a useful preparation for adulthood.

3. **Muscular Dystrophy** – Although it is unlikely that the child will drive a car, he may use an electric wheelchair on public sidewalks, so the knowledge of traffic regulations will be of practical value to him.

4. **Arthrogryposis** – Limited joint mobility will be likely to rule out the possibility of driving a car, but the students will be able to use public sidewalks, and should be an aware pedestrian.

5. **Congenital Amputee** – The student may be able to drive a car; thus, knowledge of traffic rules will serve as good preparation for the future.

6. **Osteogenesis Imperfecta** – Most children outgrow the tendency to break bones. High School driver education classes will accommodate those whose disability has not caused severe arm deformities. All will ride in, if not drive, automobiles in later years.

7. **Achondroplasia** – Short legs may lengthen time necessary for crossing a street. Drivers may not see small people in the paths of their cars.

8. **Congenital Cardiac Conditions** – The child may or may not go on to drive a car, but knowledge of basic traffic rules will be of benefit to him.

9. **Hemophilia** – Knowledge of traffic regulations will benefit the child whether or not he goes on to driver education; he will be a more aware automobile passenger after learning basic traffic rules.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
D. Traffic Regulations		
1. It is important for you to learn traffic regulations whether you drive or not.	1. Sit in the doorway to your classroom with teacher and observe the traffic in the hallway, noting good and bad ways of traveling. Make a class experience chart of your observations.	1a. Sit again in the hallway, using your chart to see how many times a good technique appears. 1b. Have class practice good traffic techniques in the daily routine. Have a monitor each day to watch the class and appoint the next day's monitor according to who was the best traffic participant of the day.
	2. Make display posters illustrating good traffic precautions and/or rules. If they apply to hall safety, display in the school hallways.	2. When hallways are quiet, play a traffic game with signs: Put traffic signs in the wrong places and have a classmate go around correcting the order.
	3. Invite a police officer to come and dis cuss traffic regulations.	3. Make a chart of traffic safety regulations you discussed with the officer.
	4. Write to AAA for Traffic Safety posters.	

BACKGROUND INFORMATION FOR THE TEACHER

1. **Familial Dysautonomia** – Generally the student will not use a wheelchair. Preparation for such situations, when dizziness makes one necessary, will help him to cope with the new situation.

2. **Spina Bifida** – The child will be able to travel anywhere his wheelchair or crutches can take him and will benefit from preparation for adult independence.

3. **Muscular Dystrophy** – The motorized wheelchair is in itself a powered vehicle, necessitating knowledge of traffic regulations, though speed is too slow for use other than pedestrian use on public streets.

4. **Arthrogryposis** – Many children will use wheelchair for traveling, and will need directions for safety in traffic situations.

5. **Congenital Amputee** – Those who normally ambulate wearing artificial limbs may use a wheelchair to go out into crowded public areas.

6. **Osteogenesis Imperfecta** – Some students will grow up to be drivers as well as pedestrians. Others will be limited by bone deformities and will not drive.

7. **Achondroplasia** – The child may use a wheelchair to lessen fatigue from traveling long distances.

8. **Congenital Cardiac Conditions** – Though able to walk short distances, the child may use a wheelchair to keep from becoming fatigued when traveling.

9. **Hemophilia** – Though he may not need a wheelchair constantly the child may use one because of a recent injury or as a protection for use of public streets.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. When traveling in his wheelchair in traffic the disabled person needs to exercise the same caution, as well as obey the rules that an automobile driver has to follow.	1. Invite Driver Ed teacher to discuss laws and caution needed when operating an automobile in traffic.	1. Discuss what traffic rules and regulations are applicable to a wheelchair passenger when traveling in traffic and make a chart listing them.
	2. Make slides illustrating the do's and dont's of a wheelchair in traffic.	2. Take a field trip to a nearby park, during which you will be observed by your teacher for your skill in manipulating your wheelchair in the streets and observing traffic regulations applicable to you.
	3. Role-play traveling in a shopping center near your home and demonstrate what procedures you must follow. (e.g. stopping at corners and lights, using signals, and riding on the right side of the sidewalk.)	3. Illustrate cartoons showing hazardous situations you may encounter when traveling in public and discuss how you can avoid them or get around them.
	4. Collect pictures of various obstacles you may meet while traveling in your wheelchair. (e.g. potholes, high curbs, etc.) and discuss how you can get around them or over them.	4. Ride through an obstacle course made by the teacher to see how well you handle yourself and your wheelchair.

Elementary Safety Module

School Bus Safety

BACKGROUND INFORMATION FOR THE TEACHER

General –

A) Equipment:

(1) ramps for loading and unloading wheelchairs
(2) seatbelts to hold passenger in seat or wheelchair
(3) locking chains to lock wheelchairs in place to prevent it from rolling around.

B) Bus Driver:

(1) should know how to use and does use the seat belts and locking chains for the passenger, either ambulatory or in a wheelchair
(2) should make sure the electric ramp to raise and lower wheelchairs into and out of the bus is working properly at all times
(3) remove any ice that may form on the ramp or the steps to the bus
(4) should be properly informed as to how he should load and unload wheelchair passengers on the ramps (that is, the wheelchair passenger should be pushed up the ramp and pulled down the ramp backwards with the driver coming down the ramp before the wheelchair).

C) Student:

(1) must be aware of what the bus driver is supposed to do and how he is supposed to do it so that he can correct procedures by drivers
(2) must make sure that he is secured in a seat, or his wheelchair is secured to the floor and that he has his seat belt fastened.

RULES FOR BUS SAFETY:

A) Wait for the attendant to help child get into the bus.

B) Be sure the attendant walks behind ambulatory children getting on, and in front of them getting off the bus.

C) Be sure seat belts are buckled and wheelchairs are locked in place.

D) Wait for attendant to help ambulatory children to get off the bus.

E) Make sure no one lifts a wheelchair by the arm rest.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Basic Rules for Bus Riders		
1. Specific safety precautions for school bus safety for a disabled person involve: A. The equipment B. The bus driver's responsibility C. You, yourself, as a passenger.	1. Make charts on which you list the safety precautions you feel are important to your school bus safety.	1. Make a checklist based on your charts and evaluate your bus driver, the equipment on his bus, his own awareness of safety procedures on his bus.
	2. Write a play, short story, or composition on an exciting or dangerous adventure that could occur on the bus due to carelessness.	2. Assign parts of your play to other students and present it to the class.
	3. Draw cartoons about safety "do" and "don't" rules.	3. Have your cartoons printed in the school newspaper or made into a poster to display in school.
B. Safety Regulations for School Buses		
1. Special Bus Safety measures must be taken when loading and unloading a wheelchair passenger.	1. Make a movie demonstrating, with cooperation of your bus driver, the proper procedure to be carried out when loading and unloading a child with your disability onto and off the bus. Show how to secure you or your wheelchair properly for riding the bus.	1. Invite other school bus drivers and students to see your movie and make suggestions for other disabilities.
	2. Practice going up and down the ramp to learn the correct way of doing it. (Get help from your physical therapist).	2. Take a field trip with your class and ask your teacher to check your understanding of bus safety practices.
	3. Draw pictures of the correct way of going up and down the bus ramp. (Be sure to include the attendant.)	3. Have physical therapist or teacher on bus duty observe correct procedures and report any unsafe ones to the bus company.
	4. Interview attendant by asking if he knows how to help children with your disability.	4. Invite driver or company heads to bring their questions and concerns to teacher or school official.
	5. Make up information sheets on your disability and special procedures for loading and unloading. (Ditto off and give out to drivers.)	

SAFETY WHILE ON THE BUS:

1) Seat belts buckled.

2) Ambulatory students remain seated until the attendant tells you to get off the bus.

3) Wheelchair-bound children check that their chair is securely fastened to bus locks and that bus seat belt is fastened around them.

4) Make sure no one lifts wheelchair by its arm rests.

5) Some disabled children should sit in the front of the bus.

1. **Dysautonomia** – The immature, emotionally unstable child will benefit from strict rules for bus safety that structure his behavior. His reaction to an emergency will be less traumatic if he is well prepared for such a situation. Due to poor coordination the student should have assistance when entering or leaving the school bus.

2. **Spina Bifida** – Avoid injury to head, because of shunt, and any trauma to legs because feeling is diminished in lower extremities.

3. **Muscular Dystrophy** – Children don't have the muscle control for adequate sitting balance. They tend to fall easily and sometimes can't get up without help. Child cannot physically help himself.

4. **Arthrogryposis** – The child will be essentially helpless on the bus, and must know how to see that his safety needs are met by others around him. In an emergency he will have to rely on others for care and assistance.

5. **Congenital Amputee** – He may be quite mobile, and should be aware of safety rules for behavior on the school bus. Not only are they a hazard to more fragile students but a prosthesis could injure the wearer during horseplay.

6. **Osteogenesis Imperfecta** – Safety rules for this child will center around protecting his brittle bones from injury and avoidance of trauma.

7. **Achondroplasia** – These children have good mobility and should be aware of safety rules regulating their behavior on a school bus. They could easily injure a less sturdy student.

8. **Congenital Cardiac Conditions** – The child must observe safety rules related to horseplay on the bus, as over-exertion or excitement could cause him to become ill. Proper preparation for accidents or emergencies will lessen shock for this child.

9. **Hemophilia** – He needs extra protection from bumps or jolts while riding on the school bus. Therefore, riding in the front of the bus is preferable.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Obeying disability-related safety rules makes riding the school bus safer.	1. Have driver education teacher come in and talk about school bus safety.	1. Make up a daily checklist for bus safety practices by driver and passengers. Rate your bus each day.
	2. Cut out news clippings on wearing seat belts.	2a. Debate pros and cons of seat belts for safety. 2b. Analyze articles on bus or car accidents and list preventive measures that could have eliminated accident situations.
	3. Make up songs on bus safety.	
	4. Discuss what to do in case of an emergency or illness on the bus. (Include roles for the driver and the passengers.)	
3. There is a safe procedure for you to follow when boarding or leaving the school bus.	1. Using a partner, role-play how you should board the school bus and leave the bus.	1. Discuss why you should have an adult help you or stand close by you when you are entering or leaving the bus. What accidents could happen to you if an adult was not close by? Discuss.
	2. English – Make up a series of rules (using complete sentences) for you to following when boarding or disembarking from the school bus.	2. Have your bus driver check you for a week on your conforming to the rules you have made.
	3. Draw a series of cartoons showing what you should *not* do when getting on or off the bus.	
	4. Invite school bus driver to discuss the best area for you to sit in while riding on the bus.	4. Discuss what accommodations should be made to insure a safe, "painless" ride. (Ex. cushioned seats, seatbelts not too tight, padded armrests, and padding the back of the seats)

General – If not secured firmly, a wheelchair could roll into things or bounce about in the bus. Equipment: Safety Belts, Seat Belts, Chains and Locks.

1. **Dysautonomia** – The child may need assistance with getting in and out of the bus due to an unsteady gait and limited visual fields if wearing a Milwaukee brace for their scoliosis.

2. **Spina Bifida** – Whether wheelchair-bound or ambulatory the child will be safer when secured firmly. Legs that would not feel an injury must be protected againt trauma.

3. **Muscular Dystrophy** – A head extension on a wheelchair is advisable on the bus for students with an advanced form of the disease who do not have head control.

4. **Arthrogryposis** – This child is dependent upon the bus driver, to help him on and off the bus and to get him seated safely and comfortably, because his range of movement is limited.

5. **Congenital Amputee** – Safety precautions include the use of good seat belts, since artificial limbs may not be too quick to brace the child against a jolt or fall.

6. **Osteogenesis Imperfecta** – The child could sustain a fracture from any trauma occurring on the bus.

7. **Achondroplasia** – Short arms may not be able to reach out to secure the child in his seat if the bus swerves or stops suddenly.

9. **Hemophilia** – Trauma could cause bleeding, so seat belts are an absolute necessity for these children.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	5. Draw a diagram of your school bus. Label where you sit when you are a passenger and discuss why.	5. Using the same diagram, label where you think you should sit (if different) and discuss why you feel you would be safer there.
	6. Make a diagram of your school bus and label all areas and obstacles that might inflict harm or injury upon you.	6. Discuss ways of improving these areas or obstacles.
4. A disabled passenger must be secured in his wheelchair and it must be secured properly in a safe position for a bus ride.	1. Discuss what safety equipment your school bus has for wheelchairs and why it has this equipment.	1. Ask another student to check your ability to direct someone to secure your wheelchair into position for a field trip.
	2. Make a role movie demonstrating how to secure a wheelchair safely into position on a bus.	2. Invite school bus drivers to view your movie and give their suggestions for any additions.
	3. Invite school bus driver to demonstrate how equipment is used.	3. Make a checklist indicating procedures to follow when using bus equipment.
	4. Draw a cartoon illustrating what would occur if wheelchairs weren't secured properly.	

General – The disabled student who is not confined to a wheelchair needs to wear his seat belt to prevent being thrown from his seat because injury might cause aggravation of problems associated with his disability.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
5. Seat belts are of major importance in insuring a safer ride on the school bus.	1. Discuss the role of seatbelts and how they can be of great importance to you.	1. Collect newspaper articles on seatbelts and how they save lives. Discuss.
	2. Invite school bus driver to demonstrate how to lock and unlock a seat belt.	2. Have a bus driver or teacher observe you locking your own seat belt and securing yourself safely in place while on a field trip.
	3. Illustrate with cartoons hazards you could encounter if you didn't wear a seatbelt when riding the school bus.	3. Using each letter from the word SEAT BELT for the beginning letter of the first word of a sentence, make up eight sentences telling why seatbelts are so important to your safety.

1. **Dysautonomia** – Absence of tears and involuntary blinking reflexes make eyes very prone to injury or irritation.

9. **Hemophilia – SUGGESTED RULES:**

a) Sitting in a well-padded seat in an area less likely to receive bumps.

b) Being securely strapped in with seatbelts, but not having the seatbelts rubbing on your skin.

c) Bus driver guiding student (if ambulatory) up steps or ramp of the bus to prevent him from falling or bumping himself.

d) Staying clear of all sharp objects and rough surfaces.

e) Riding in front of the bus rather than on rear seat.

The safety precautions should center around protecting himself from bruises or bumps resulting from a bus ride.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
DYSAUTONOMIA		
D-1. Keeping windows closed while riding on the bus is taking precautions against damage to your eyes from dirt, dust, or other objects that may fly through the opened window.	1. Discuss what happens when a window is opened on the bus when it is in motion. Science experiment: Using caution, place a fan near an opened window (if possible outside it) and see how dirt, leaves, and dust are blown around.	1. Discuss how having the window on the bus opened when the bus is in motion can be especially hazardous for you.
	2. Have bus driver demonstrate how to open and close windows on the bus properly.	2. Ask the bus driver to observe you operating a bus window so that if at anytime they are opened, you could close them yourself before the bus begins to move.
	3. Discuss what would you do if you were riding on a bus and someone near you opened the window, causing wind to blow in your eyes. (Ask the person to close the window, or get up and change your seat.)	3. Invite school nurse to suggest and discuss ways you could protect your eyes, when riding on the bus, from foreign objects.
HEMOPHILIA		
H-1. Special precautions will minimize injury resulting from a bus ride to or from school.	1. Invite school nurse to discuss what aspects of riding a school bus you must be particularly cautious about.	1. Make a model of a school bus and label all areas that are especially hazardous to you.
	2. Discuss why seatbelts are especially important to your safety when riding on the school bus.	2. Discuss ways seat belts can cause injury to you and what precautions you need to take when using them.
	3. Write a letter to the school bus company requesting information on what accommodations are available for buses that would add to your comfort when traveling.	3. Discuss which accommodations could realistically be made and tell how.

9. Hemophilia – A bus driver should be aware of the potential danger his bus presents to these children, and must know proper handling procedures for such children.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
H-2. Special precautions when choosing a seat on the bus will help you to have a safer ride.	1. Invite school bus driver to discuss the various sections of the bus and suggest which section (front, middle, or back) would be most comfortable for you to ride in.	1. Using a 3-sided milk carton, make a model of your school bus and designate the best seat for you to be in when riding on the bus and in the form of a paragraph, write why.
	2. Illustrate some hazards which you may experience when riding on the bus.	2. Using complete sentences, for each illustration of a hazard, write a warning of what should be done to protect you from injury on the bus.
H-3. Special assistance or guidance from the bus driver will minimize injuries that could occur when you are getting on or off the school bus.	1. Make a list of procedures and/or safety precautions that your bus driver should follow when transferring you onto and off the bus.	1. Use your check list to check your bus driver when he transfers you to see how many he carries out.
	2. Play-act with a partner how to tell someone how he should properly get you on and off the school bus.	2. Illustrate with cartoons how your bus driver should assist you when getting on and off the school bus both in your wheelchair (if you have one) and when you are walking.

Elementary Safety Module

Water Safety

2. **Spina Bifida** – If students are unable to transfer themselves into the pool, then a hoyer lift can be of great help to lift them into the water especially the heavier children. Encourage independence in transferring.

3. **Muscular Dystrophy** – Weak muscles make older, heavier children impossible to lift into a pool. Use of a hoyer lift is necessary to lower such children into the water.

General – It is essential that all disabled children make use of the buddy system when swimming so that if they have any trouble or meet with any experiences in the water that they are not prepared for, or cannot cope with, someone is always there to assist them and give them the aid they need.

1. **Dysautonomia** – These children should never be allowed to put their heads under water. Due to their respiratory difficulties, swimming has to be carefully supervised.

4. **Arthrogryposis** – Due to stiffened joints and many times, heaviness of weight, special care is needed when transferring the student into the pool. A hoyer lift can be a great help in doing the transfer, both easier and safer.

6. **Osteogenesis Imperfecta** – Due to brittle bones, students need special care when being handled or when being transferred into the swimming pool.

3. **Muscualr Dystrophy** – 1. Children do not have enough muscle strength to cough up water. One-to-one attention is necessary to keep head from going under water. 2. Weak muscles make changing position difficult or impossible when swimming with life jacket or tubes; children cannot get out of the dangerous position by themselves.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Swimming		
1. A set procedure should be followed by aides or swimming instructors when transferring children with your disability into a pool.	1. Draw up a chart with step-by-step instructions for transfer with a hoyer lift. 2. Practice transfer from wheelchair to pool with use of hoyer lift, following chart directions. 3. Laminate chart with help of media specialist and display in the pool area.	1. Have evaluation by swimming instructor during practice session.
2. A buddy system is essential to pool safety.	1. Discuss the purpose of a buddy system when swimming. 2. Before each class choose a buddy aide who will stay with you in the pool and notify the lifeguard if anything happens to you while in the pool. 3. Practice periodic drills whereby buddies raise hands or signal verbally that they are together when the lifeguard or instructor blows a whistle.	1. Role-play what the role and responsibility of a buddy is when swimming. 2. Ask swimming instructor or lifeguard to evaluate your responsiveness.

1. **Dysautonomia** – If a child becomes chilled there is a possibility that he will catch a cold, throat infection or possibly pneumonia. Therefore, precautions should be taken at all times, to protect students from colds.

2. **Spina Bifida** – Lowered resistance to infections and the special need to avoid urinary tract infections makes it important that the child avoid becoming chilled.

General – Floor areas surrounding the pool area are usually very wet and slippery. Therefore, it is essential in preventing accidents for the students, whether or not they are in wheelchair normally, to use wheelchairs when traveling to and from the pool.

3. **Muscular Dystrophy** – In early stages they have a tendency to fall frequently. This will be aggravated by wet floors.

4. **Arthrogryposis** – Due to lack of joint mobility children should use a wheelchair when traveling to and from the pool.

3, **Muscular Dystrophy** – It is unwise for these children to swim for a very long period because of chilling. Caution against getting any water in their lungs. Pneumonia is a very serious illness because of their muscle weakness which makes coughing difficult.

5. **Congenital Amputee** – Because of artificial limbs, crutches and/or wheelchairs the students should not walk to and from the pool if they are capable of doing so, because the pool floor areas are usually very wet and slippery and can cause many accidental injuries from falls.

6. **Osteogenesis Imperfecta** – Due to extremely fragile bones, students must take precautions to prevent any and all falls, especially when in areas where falls are common, e.g. the wet floor areas surrounding the pool.

9. **Hemophilia** – Floor areas surrounding the pool are usually very wet and slippery. Therefore, it is essential that these students walk carefully in the pool area to prevent falls because bruises, bumps, cuts, etc., are very dangerous to them since their blood lacks clotting ability.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
3. You should be covered with a towel whenever you are out of the pool.	1. Make a list of suggestions on how to prevent catching colds when swimming.	1. Be appointed by swimming instructor or lifeguard to check on coverage of swimmers when they are out of the pool. Issue warning slips to those uncovered.
4. If a physically disabled child has difficulty walking, he should use a wheelchair going to and from the pool.	1. Discuss reasons for using wheelchairs when mobilizing around the pool area. Why is it so essential that no student walks around the pool, both before and after swimming?	1. Be appointed by your swimming instructor or lifeguard, to check people entering the pool area to see that no one is fooling around. Issue summonses or warning notices to whomever is negligent.
	2. Role-play various types of accidents that could occur around the pool area if students did not use wheelchairs to travel about in.	2. Discuss your own experiences with pool accidents, including how they occurred and what should have been done to prevent them. Formulate a safety slogan to follow to prevent their occurrence again.
	3. Illustrate with cartoons accidents that could take place around the pool area due to students walking or running about.	3. Make up a series of posters to place around the pool area to remind students of the importance of using a wheelchair when traveling around the pool.

2. **Spina Bifida** – Due to poor sitting balance and insensitivity in lower limbs, special precautions must be taken to protect the students from any falls, especially from backless benches from which one can easily lose balance and fall off.

3. **Muscular Dystrophy** – Contractures or tightening of unused muscles cause difficulty in sitting on a bench and holding his head up.

4. **Arthrogryposis** – Because of stiffened joints and lack of ability to bend legs, a child should not be set on a bench without a back for support. This would be extremely hazardous.

5. **Congenital Amputee** – A child with missing limbs cannot balance or support himself very well. Therefore, it is hazardous for a child like this to be left sitting alone on a backless bench. Instead he should be seated in a wheelchair or a chair with supporting arms and back.

6. **Osteogenesis Imperfecta** – Because the students break their bones easily, special precautions must be taken to protect them from any falls, especially from backless benches from which one can easily lose balance and fall off.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
5. Children with problems in sitting balance should not be unattended while on the benches or tables in the locker rooms.	1. Role play a situation whereby correct type of bench is used. Then demonstrate what happens to a child who is put onto a bench with no support and discuss why this is so dangerous for you.	
	2. Illustrate with cartoons the accidents that could occur if a physically disabled student with your handicap is left sitting alone on a backless bench.	2. Discuss any of your own experiences with pool accidents due to someone's carelessness. Suggest what actions should have been carried out to prevent these accidents.

1. DYSAUTONOMIA

The most severe limitation that is placed upon a child with Dysautonomia and on his instructor will result from the fact that it is necessary to prevent a child from putting his head in the water. If this proves to be the case, the instructor should concentrate his efforts on the student's mastery of strokes which can be performed while on his back. In teaching these strokes it should not be necessary to modify the basic strokes to any great degree. A good device to secure would be a snug well-fitting face mask and/or goggles. These will make it easier for a child to perform the tasks listed. An added benefit of a mask or goggles is that they protect a child's eyes from pool water or ocean water which may irritate the eyes, especially so for these children who have problems with the tear ducts. A well-fitting face mask may be more desirable initially in working with these children in that it covers their noses and thereby lessens the chance that they will take water in through their nose. (The child's physician should approve the use of the face mask.)

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
DYSAUTONOMIA		
D-1. With appropriate instruction you can gain the confidence and competence to enjoy swimming in safety. A. You have the capacity to float on your back.	1. Under the direction of your teacher, float on your back in very shallow water.	1. Evaluate your progress by the length of time which you are able to float.
D-2. You are capable of swimming in a vertical position in the water using a dog paddle type of pull. At the same time movement may be achieved by using a bicycling type of motion by the legs.	1. When your teacher is in the water with you, assume a vertical position in waist-deep water. Gradually, move into deeper water until you are unable to touch bottom. Attempt to swim using the strokes described in the concept under the supervision of your teacher.	1. Note your progress by your ability to float unaided in a vertical position. Have your swimming instructor or lifeguard note your mastering of the strokes by observing the distance you are able to cover and/or the length of time you are able to perform the strokes before tiring.

2. SPINA BIFIDA

This is a good first step for the instructor to pursue when first working with a student with Spina Bifida for it allows him to judge how much muscle control a student possesses in his lower extremities. The ability to lift the leg to break the water would indicate a sufficient degree of musculature present so that the student could master a flutter kick.

The instructor should be aware that a student with Spina Bifida may be involved to the extent that he is unable to perform this activity, or only by rolling his hips is he able to achieve any lift.

This activity is another means of evaluating a student's involvement. If he is able to achieve a strong enough kick he will be able to keep his body horizontal in the water. This activity, like the first one, is important in that it helps the instructor to decide how much the student is capable of using his legs when learning various strokes.

In addition the instructor can very often determine a child's attitude toward the water by the degree of involvement of his legs. Generally a student who is very involved will be much more uneasy in the water since he cannot depend on his legs to help control his body movements.

Children who are very involved from birth are likely to never have had much activity in the water at younger ages and consequently, the instructor must be prepared to teach the most rudimentary skills (holding breath under water, putting face in the water, etc.).

It is very important that an instructor reassure a child with Spina Bifida as to his ability to swim in spite of his disability. To a child who is very involved and unable to perform either of the first two activities it should be pointed out that the legs are of minor importance in swimming since the upper body supplies most of the power in swimming, with the legs being more important in maintaining balance. This gives the student greater confidence in his ability to compete in the water despite his physical limitation.

To a child who is able to successfully perform the first two activities, at least to a fair degree, it should be pointed out that swimming is an excellent manner in which to strengthen the musculature which is present.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. SPINA BIFIDA		
SB-1. With appropriate instructions a child with Spina Bifida can gain the confidence and competence to enjoy swimming in safety. The water affords a student with Spina Bifida greater freedom of movement in that you are able to manipulate your legs to a greater degree than outside the water.	1. Under the supervision of your teacher, wade in shallow water (waist deep) leaning against the ledge of the pool. Then place all of your body weight on one leg while with the other you attempt to lift your leg until you are able to clear the water with your heel or your ankle.	1. Evaluate your progress by noting the degree to which you are able to lift your respective legs from the bottom of the pool to the top of the water.
	2. Under the supervision of your teacher, stand in shallow water, hold onto the ledge of the pool and attempt to keep your body in a horizontal position by doing a flutter kick.	2. Evaluate your progress by noting your ability to stay on top of the water in a horizontal position.

2. SPINA BIFIDA

The elementary backstroke is good to introduce initially to a child with Spina Bifida since the upper body plays the dominant role in the stroke thereby putting to use the student's most dominant physical asset.

It is much easier for a student with Spina Bifida to master initially a stroke on his back since his face is out of the water and the student can be encouraged by the instructor while he is actually learning the stroke. Also, it is very easy for an instructor to help support a student doing this stroke by simply standing behind his head and lending a reassuring hand under the back.

The elementary backstroke is very basic and in most instances can be learned rather easily. By having the student learn a stroke quickly it will build confidence when attempting to teach more difficult strokes later on.

Learning a basic skill such as holding their breath and putting their face in the water is very important to most children with Spina Bifida since they probably have not had much experience in the water and are generally apprehensive because their legs are unable to help them if they were to lose their balance and become submerged.

In addition, a child with Spina Bifida will eventually have to effectively master rhythmical breathing if he is to progress to more difficult strokes. Submerging the face is a good first step in this direction. A good teaching aid in this area is a pair of swimmer's goggles which allows the student to look under water and view clearly the pool bottom. A good activity is having the student pick up chips from a shallow area of the pool where he is able to lie on his stomach.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
SPINA BIFIDA		
SB-2. The student with Spina Bifida is able to perform a stroke and propel himself through the water regardless of his physical limitations.	1. Under the supervision of your teacher float on your back – unaided if possible – with a swimming vest or flotation device. Then follow your teacher's instructions in learning the mechanics of an elementary backstroke with stronger emphasis on the arm phase of the stroke than on the legs. A flutter kick may be and should be in most instances substituted initially if you are able.	I. Evaluate your success by your ability to float and propel yourself through the water.
SB-3. The student with Spina Bifida should not be afraid to go under water.	1. Under the supervision of your teacher, learn to put your face in the water until you are comfortable doing so for approximately five to ten seconds.	1. Determine your progress by the length of time you are able to put your face in the water and the degree of fear you feel when doing so.

2. SPINA BIFIDA

This activity is designed basically to teach a child to breathe quickly and efficiently. The basic techniques he learns from this will be incorporated into more advanced strokes performed on his stomach later on.

When the student first performs this activity it may be necessary for the instructor to support the child under the arms to aid him in going up and down through the water.

The primary benefit of this activity of bobbing is that it teaches the student to use his arms to control his body in the water.

By having the student perform a scissor kick where physically possible the student also builds the musculature that is present in the lower extremities.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
SPINA BIFIDA		
SB-4. It is possible to breathe rhythmically while alternating between being submerged and being above the water.	1. Under your teacher's supervision go to an area of the pool that is over your head. Then with an instructor's aid, alternately submerge yourself until your head is covered; then come out of the water until your chin is clear. This should be done in a vertical position, initially at the side of the pool using a ledge to aid you in going up and down. In addition, learn to exhale through your nose while underwater and take a quick breath through your mouth when coming up for air.	1. Judge your progress by your ability to sustain a steady rhythm of alternate submerging and coming up out of the water. You should be comfortable performing this activity 10--15 times consecutively.
SB-5. You should now use your arms to help you move up and down through the water. This is the first step in teaching you to control your body in the water by the action of your arms.	1. Perform the same activity as above but the pool edge should now be abandoned. Instead you, with some support from the instructor, should now strive to bob up and down in the water by extending your arms laterally and alternately pushing down hard against the water until the arms meet the side of the leg to raise yourself. Then, by raising your arms above your head you will submerge. Where possible, you should be encouraged to perform a scissor kick with the legs to aid in lifting your head above the water.	1. Same as above.

2. SPINA BIFIDA

This activity may be the most important for a Spina Bifida student to master since his fear of the water will never be alleviated entirely so long as he cannot control his body in the water. Once he learns to put himself on his back or stomach at will, he will become much more confident and able to progress to various other swimming strokes and recreational activities.

When the child is first learning to scull it may be useful to use a flotation device around his waist to add great buoyance in the water and help keep him higher in the water.

This simple activity is difficult for most students with Spina Bifida unless they have fully mastered sculling. For most, they will be unable to get off their stomach unless they have learned to effectively scull. Until the student is comfortable merely floating on his stomach he will be unable to learn to swim on his stomach, hence the importance of his mastering this skill.

Before the student learns either of these two strokes he must have mastered rhythmical breathing. Otherwise he will be unable to swim more than a few strokes without coming up for air.

In students who are more involved a flotation belt around the hips or ankles will help keep the lower extremities horizontally on top of the water, thus making the arm phase more efficient in that the legs do not drag as much in the water which tends to drop the shoulders down and make pulling more difficult.

The students whose legs are less involved should be encouraged to use their legs, because the kicking action will aid the muscle strength and tone.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
SPINA BIFIDA		
SB-6. It is possible to control the position that the body will assume in the water by a sculling action of the hands and the direction in which the head is angled.	1. Practice sculling with your hands until you can put yourself on your back and stomach and return to a vertical position in the water. You should be encouraged and instructed to use your head in assuming these positions since the direction in which the head is angled controls the direction in which the hips and lower extremities will also move. (i.e., tucking the shins lowers the hips.)	1. The student may judge his progress by noting his ability to assume and maintain various positions in the water.
SB-7. It is possible for you to float on your stomach.	1. Float on your stomach.	1. Judge your ability to float comfortably on your stomach and breathe when you desire and/or return to a vertical position.
SB-8. It is possible for you to swim on your stomach.	1. Ask your teacher to introduce to the students either a breast-stroke or crawl stroke stressing the arm phase and the mechanics of rhythmically breathing so as to be comfortable swimming a short distance.	1. Judge your progress by your ability to move through the water comfortably for short distances. Gradually, building up the distances you can swim.

3. MUSCULAR DYSTROPHY

Students who have Muscular Dystrophy initially will be very apprehensive toward floating on their back. This fear stems from two basic factors: knowledge that he is unable to control his body movements and an inability in most cases to bring his body to a vertical position in the water, if he so decided. This necessitates almost constant supervision by an aide or instructor in initial working.

In most instances an instuctor will have to modify the basic elementary backstroke to suit the physical capability of his student. This demends that an instructor be flexible and patient in his dealings with the student. A student may want to do a stroke as he has been instructed but simply does not have enough physical strength.

Having a student with MD progress to the point where he is able to propel himself through the water is a great confidence builder. It allows the student to feel that he can compete with fellow students in the water, whereas this may be impossible with physical activities outside the pool.

The third important feature of teaching a child with MD to do a stroke is that it provides valuable exercise. The elementary backstroke in particular helps to tone up the muscles in the chest region because of its emphasis on a pulling motion laterally through the water.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
3. MUSCULAR DYSTROPHY		
MD-1. With appropriate instruction, a child with Muscular Dystrophy can gain the confidence and competence to enjoy swimming in safety.		
A child with your disability has the capacity to float in the water with little or no effort with the aid of a vest (flotation device). As your confidence increases, a child with your disability possesses the capacity to float on your back without any aid or floating devices.	1. Under the direction of your teacher, float on your back in very shallow water (6″–1′) gradually increasing both the length of time which you attempt to float and also the depth of water in which you float.	1. Evaluate your progress by the length of time which you are able to float. Have lifeguard or instructor time you, noting your progress.
MD-2. A child with your disability has the capacity to do a stroke in the water – in most cases a modified back-stroke.	1. While your teacher is watching you, swim short distances on your back using the elementary back-strokes. Gradually, try to swim longer distances.	1. Evaluate your progress by noting the distances that you are able to cover using the swimming stroke.

3. MUSCULAR DYSTROPHY

The most important feature of this activity is that it gets the student off his back where he will never be totally at ease because of his disability. A beneficial aspect as well is the motion this stroke requires of the legs – namely stretching and lifting. These two activities are impossible to most MD's confined to a wheelchair outside of the water.

The instructor should be aware that the high fat content of most MD's allows them a greater tendency to float in the water and makes this stroke quite comfortable to perform. In some instances, it is necessary to use inflatable bubbles on the arms to give confidence to a hesitant student. Generally the dependency does not last very long.

This activity is useful in that it provides a change of pace from merely doing strokes. The student seems less conscious of physical exertion when it is incorporated into a game and naturally is more receptive toward activity in the water. Also, the activity tends to build confidence in the student as to his ability to maneuver through unconscious motions the student must make in the course of the game or activity.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
MUSCULAR DYSTROPHY		
MD-3. You are capable of swimming in a vertical position in the water using a dog paddle type of pull. At the same time, movement may be achieved by using a bicycling type of motion by the legs.	1. When your teacher is in the water with you, assume a vertical position in waist-deep water. Gradually, move into deeper water until you are floating in water deep enough so that you are unable to touch bottom. Attempt to swim using the strokes described in the concept under the supervision of your teacher.	1. Note your progress by your ability to float unaided in a vertical position. Have your swimming instructor or lifeguard note your mastering of the strokes by observing the distance you are able to cover and/or the length of time you are able to perform the strokes before tiring.
MD-4. A child with your disability is capable of recreational activities in the water.	1. Under the supervision of your teacher, participate in such activities as water basketball with a very slightly elevated basket or basket that floats in the water. Attempt to play in deep water so that you will be able to tread water and maneuver vertically.	1. Have your swimming instructor or lifeguard observe and evaluate your capabilities.

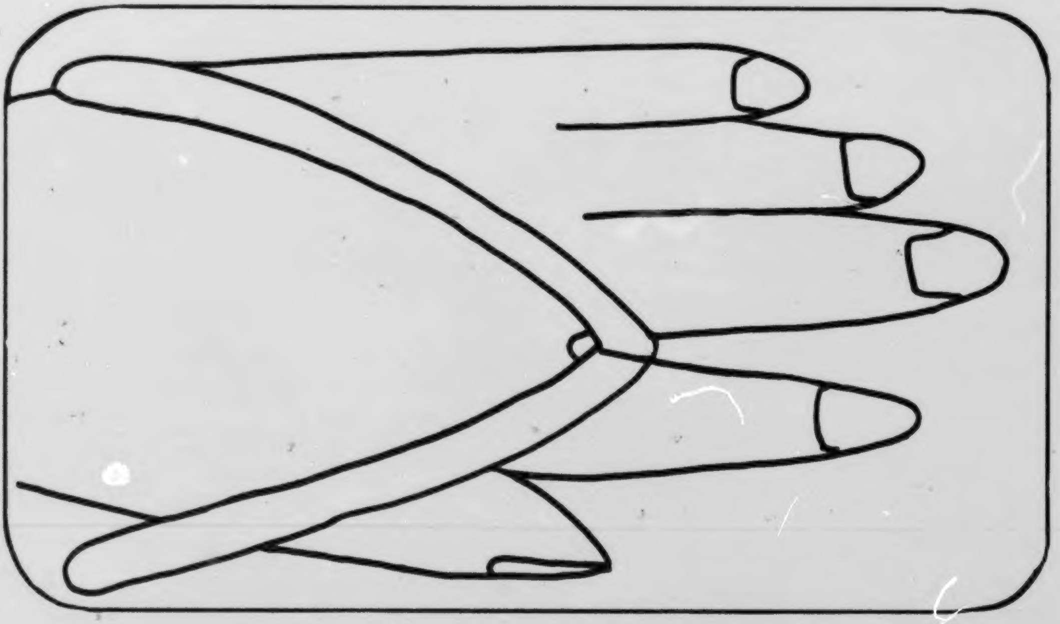
4. ARTHROGRYPOSIS

This basic activity is important to a student with Arthrogryposis because it is the first step toward mastering the elementary backstroke which in most cases proves to be the main-stay of the swimming strokes for this disability.

Because Arthrogryposis causes great stiffness in most instances it will be necessary for an instructor to provide support to the student when he first learns to float.

Very often a student with Arthrogryposis will require a flotation device around the hips and/or the upper arms to offset a very low center of gravity which is caused by the rigidness throughout the hips causing them to lie very low in the water.

The basic elementary backstroke in almost all cases will have to be modified for a student with Arthrogryposis to perform it. In that each student with Arthrogryposis will vary in regard to the range of motion that is possible throughout his joints, it is important for the instructor to determine how much flexibility the student is capable of and proceed from there. For the most part these students will be unable to achieve full lateral extension of their arms. As a result, it is up to the instructor to stress that the student use any surface area from the armpits to finger tips to pull water. A handy device which has proven itself well is a hand paddle which can be slipped around a student's hand or forearm. These are capable of being worn in such a fashion that they increase the surface area which pulls water, thereby increasing the distance a student may swim. Below is a diagram of these hand paddles.



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CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
ARTHROGRYPOSIS		
A-1. With appropriate instruction a disabled student can gain the confidence and competence to enjoy swimming in safety.		
It is possible for you to float on your back.	1. Float on your back with the instructor providing support if it is necessary.	1. Judge your progress by noting your ability to float alone for increasingly longer periods.
A-2 It is possible for you to perform a modified elementary backstroke.	1. Float on your back and then perform a modified elementary backstroke.	1. Evaluate your progress by noting your ability to propel yourself through the water.

4. ARTHROGRYPOSIS

This activity supplements the pulling motion of the arms. It is substituted for the inverted frog kick which normally accompanies the elementary backstroke because the student with Arthrogryposis lacks the flexibility through the knees and ankles needed for a successful frog kick.

The flutter kick is beneficial in itself in that its motion lies within the range of motion that can be attained with this disability and also, because its very motion may be capable of increasing to a degree, the flexibility of a student's hips, knees, and ankles.

For the most part, it will be much more difficult for a student with Arthrogryposis to swim on his stomach. This stems from the fact that the hips very often are unable to come to a fully horizontal position in the water and/or the student will be unable to turn his head sideways to breathe as is normally the case when swimming the crawl stroke. To eliminate the former problem necessitates that a student swim with his head out of water – if possible. Help him learn to lift his head out of the water to take quick breaths or master the use of a snorkel if he is unable to clear his head from the water.

The arm stroke of both the breast stroke and crawl stroke will all have to be modified. No set movement can be described so that the instructor will have to judge for himself what movements are possible to practice.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
ARTHROGRYPOSIS		
A-3. It is possible for you to propel yourself through the water using your legs alone.	1. Float on your back and then do a flutter kick.	1. Same as above.
A-4. It is possible for you to swim on your stomach.	1. Float on your stomach and then perform either a breast stroke, pull or a dog paddle (basic crawl stroke for beginners).	1. Same as above.

5. CONGENITAL AMPUTEE

The student without a limb has the capacity and ability to master certain swimming techniques, if given proper care and instruction. In some instances, the instructor may have to modify basic swimming techniques to suit the needs and physical capabilities of the student. Swimming provides several basic needs for the congenital amputee student, e.g.

A) it provides valuable exercise,

B) it can build the child's confidence – it allows him to feel that he can compete with fellow students in the water,

C) by learning the dog paddle or flutter kick he is given a good opportunity to stretch and lift his legs.

The student will eventually have to master rhythmical breathing if he is to progress to more difficult strokes. Submerging the face is a good first step in this direction. A good teaching aid in this area is a pair of swimmer's goggles which allows the student to look under water and view clearly the pool bottom.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
5. CONGENITAL AMPUTEE		
CA-1. With appropriate instruction, you can gain the confidence and competence to enjoy swimming in safety. A) A child with artificial limbs has the capacity to float in the water with little or no effort with the aid of a vest (flotation device). B) As your confidence increases, a child with artificial limbs possesses the capacity to float on his back without any aid or floating devices.	1. Under the direction of your teacher, float on your back in very shallow water (6"–1') gradually increasing both the length of time which you attempt to float and also the depth of water in which you float.	1. Evaluate your progress by the length of time which you are able to float. Have lifeguard or instructor time you, noting your progress.
CA-2. You should not be afraid to go under water.	1. Under the supervision of your instructor learn to put your face in the water until you are comfortable doing so for approximately five to ten seconds.	1. Determine your progress by the length of time you are able to put your face in the water and the degree of fear you feel when doing so.

5. CONGENITAL AMPUTEE

This activity is designed basically to teach a child to breathe quickly and efficiently. The basic techniques he learns from this will be incorporated into more advanced strokes performed on his stomach later on. When the student first performs this activity it may be necessary for the instructor to support the child under the arms to aid him in going up and down through the water.

If a child is to be able to swim any distance, he must be comfortable with his face in the water, which means that he must be able to breathe rhythmically as well.

When the child is first learning to scull it may be useful to use a flotation device around his waist to add greater buoyancy to the water and help keep him higher in the water.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
CONGENITAL AMPUTEE		
CA-3. It is possible to breathe rhythmically while alternating between being submerged and being above the water.	1.. Under your teacher's supervision, go to an area of the pool that is over your head. Then, with an instructor's aid, alternately submerge yourself until your head is covered, then come out of the water until your chin is clear. This should be done in a vertical position, initially at the side of a pool using a ledge to aid you in going up and down. In addition, learn to exhale through your nose while under water and take a quick breath through your mouth when coming up for air.	1. Judge your progress by your ability to sustain a steady rhythm of alternately submerging yourself and then coming up out of the water. You should be comfortable in doing this activity 10–15 times consecutively.
CA-4. You can learn to breathe at a steady rhythm so that you are comfortable swimming longer distances.	1. Bob up and down in water that is chest deep for you, so that your head is submerged for the same duration as it is above the water.	1. Evaluate your progress by noting the number of repetitions you can perform comfortably at the various water depths.
CA-5. It is possible to control the position that the body will assume in the water by a sculling action of the hands and the direction in which the head is angled.	1. Practice sculling with your hands until you can put yourself on your back and stomach and return to a vertical position in the water. You should be encouraged and instructed to use your head in assuming these positions since the direction in which the head is angled controls the direction in which the hips and lower extremities will also move. (e.g. tucking the chin lowers the hips.)	1. Judge your progress by noting your ability to assume and maintain various positions in the water.

5. CONGENITAL AMPUTEE

Watch closely for ability to come to safe resting positions.

Before the student learns either of these two strokes he must have mastered rhythmical breathing. Otherwise he will be unable to swim more than a few strokes without coming up for air.

1. Remember, for double leg amputees to encourage strokes with underwater recovery. If possible, place a platform in the water for use in resting phase by double amputees, specifically those above the knees.

2. The scissor kick is more effective than breast-stroke kick for single amputees.

3. Persons who have lost both legs will modify the position of their body while swimming the side stroke and breast stroke. When doing the breast stroke, the swimmer should drop one shoulder in order to permit the face to be turned to one side. This will enable him to obtain air more easily. Side stroke will be partially on the side.

4. For double leg amputees, the gliding phase of the side stroke will be much shorter; consequently, the gliding phase of the breast stroke will be shortened, and the outward sweep of arms will be reduced to semi-circles.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
CONGENITAL AMPUTEE		
CA-6. It is possible for you to float on your stomach.	1. Float on your stomach under the supervision of your instructor.	1. Progress will be evident in your ability to float comfortably on your stomach and breathe when you desire and/or return to a vertical position.
CA-7. It is possible to swim on your stomach.	1. Ask your teacher to introduce you to either a breast stroke or crawl stroke stressing the arm phase and the mechanics of rhythmically breathing so as to be comfortable swimming a short distance.	1. Judge your progress by your ability to move through the water comfortably for short distances. Gradually, build up the distances you can swim.

6. OSTEOGENESIS IMPERFECTA

A. This is a good first step for an instructor to pursue when working with this disability in that it allows him to judge how much musculature is present in the lower extremities. If a student has the ability to clear the heel from the water it would be a good indication that in time he could master a flutter kick.

B. This activity is also useful in that it is probably the least exerting exercise that is directly beneficial to the lower extremities.

C. Although this activity is probably the most basic that can be prescribed to develop muscle tone, the instructor should be aware that some individuals will be unable to support their entire weight on one leg as this activity demands. If this proves to be the case, the instructor should substitute another exercise or activity.

This activity (2) can be used as a follow-up for the previous one or as a first step for individuals who are unable to stand and support their body weight.

This exercise is beneficial for two reasons: 1) it forces the student to move his legs against the resistance of the water which in itself is valuable therapy and 2) mastery of this exercise means that the student will be well on his way to learning how to do the crawl stroke since the flutter kick constitutes the leg phase of that stroke.

Of all the kicks that various swimming strokes require, the flutter kick is probably the easiest to master. The motion involved demands little more than the ability to move the legs up and down through the water and therefore, if any stroke involving leg action is to be learned by these students when their legs are comparatively weak, the flutter kick would seem to offer the best potential for success.

As the student improves in technique and strength, this same activity should be increased for longer periods of time: 10 seconds initially to 60 seconds after several sessions. If the student has difficulty achieving a horizontal position in the water, the instructor should support him under the stomach with a hand or use a flotation belt around the hips to provide greater lift than the legs are capable of providing initially. As strength is built up in the lower extremities, the student's ability to achieve a horizontal position will increase proportionally.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
6. OSTEOGENESIS IMPERFECTA		
OI-1. The water affords a student with Osteogenesis Imperfecta a greater opportunity to use his legs than is the case outside the water.	1. Under the supervision of your teacher stand in shallow water (waist deep) leaning against the ledge of the pool. Then support all of your weight on one leg while with the other you attempt to lift your leg until you are able to clear the water with the heel or your ankle.	1. Evaluate your progress by noting the degree to which you are able to lift your respective legs from the bottom of the pool to the top of the water.
	2. Under the supervision of your teacher stand in shallow water, hold onto the side of the pool and attempt to bring your body to a horizontal position and maintain it by doing a flutter kick.	2. Evaluate your progress by noting your ability to stay on top of the water in a horizontal position.

6. OSTEOGENESIS IMPERFECTA

This activity is merely a variation of the previous one. In that it is more difficult to propel oneself through the water than to merely stay horizontally on top of the water, the student should have mastered the previous activity before attempting this.

The ability to propel themselves through the water is a rewarding one for students with Osteogenesis Imperfecta since it enables them to use their legs for a recreational activity – a feat that most likely has been a rare occurrence for them since the onset of their disability. As they become more proficient, the students should strive to cover increasingly longer distances.

Some students may find it difficult to cover any distance or even maintain a horizontal position for any length of time. If this proves to be the case the instructor should not hesitate to use flotation devices (styrofoam belt) around the hips as these will make it easier for the student to master these activities and can be discarded in time. In the interim, they make it possible for an instructor to continue on and teach other aspects of the crawl stroke in its entirety.

While this activity cannot be directly tied to mastery of a specific stroke, it is valuable in that, like the other activities, it forces the student to use his legs against the resistance of the water.

6. OSTEOGENESIS IMPERFECTA

While this activity cannot be prescribed uniformly for all students with this disability it may prove very useful for selected students – (particularly those almost over Legg-Perthes). Since the body is buoyant in the water, it should prove easier for a student to ambulate in the water than on land since his legs will have to support less weight. Therefore, this may prove to be a good first step in these students leaving a wheelchair.

While the students are building up the strength in these lower extremities it is important that they be supported physically by an aide or by a flotation device such as inflatable arm cuffs.

A good variation of this exercise would be to have the student practice bobbing. This necessitates that the student uses his legs in a similar fashion and at the same time sharpens his skills needed to master rhythmical breathing.

Once these skills have been practiced and at least partially mastered, the student should be quite capable of performing a front or back crawl. Kicking involved with breast stroke and elementary backstroke may be difficult for these students since it would involve mastery of the whip of frog kick. These are often difficult to learn for someone who has no disability and since they demand greater flexibility through the ankles, knees and hips than this disability commonly permits, I would hesitate to introduce them except in special cases.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	3. Under the supervision of your teacher stand in shallow water and, while holding a kick board in your hands, push off from the bottom of the pool and propel yourself through the water using your legs alone.	3. Evaluate your progress by noting your ability to move increasingly longer distances through the water using your legs alone.
	4. With an instructor or aide, go out in water over your head while being supported under the arms, and practice a scissor kick.	4. Evaluate your progress by noting your ability to perform the scissor kick for gradually increasing intervals. When endurance has been built up, you should attempt to keep your head above water using the action of your legs alone.
OSTEOGENESIS IMPERFECTA OI-2. The water supplies enough buoyance so that it is possible to ambulate in the water.	1. Under the supervision of your teacher stand in waist-deep water and practice walking. Have an aide help you for support or use parallel bars if they are available.	1. Evaluate your progress by noting your ability to walk longer distances, to do so without support, and finally to feel confident in your ability to walk.

7. ACHONDROPLASIA

The student with Achondroplasia has the capacity and ability to master certain swimming techniques, if given proper care and instruction. In some instances, the instructor may have to modify basic swimming techniques to suit the needs and physical capabilities of the student. Swimming provides several basic needs for the Achondroplasia student, e.g., (a) it provides valuable exercise, (b) it can build the child's confidence since it allows him to feel that he can compete with fellow students in the water, and (c) by learning the dog paddle or flutter kick he is given a good opportunity to stretch and lift his legs.

Since achondroplasics often have lordosis, a surface arm backstroke is advantageous because the water holds the weight of the spine better.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
7. ACHONDROPLASIA		
AC-1. With appropriate instruction, you can gain the confidence and competence to enjoy swimming in safety. (A) A child with Achondroplasia has a capacity to float in the water with little or no effort with the aid of a vest (flotation device). (B) As your confidence increases, a child with your disability possesses the capacity to float on your back without any aid or floating devices.	1. Under the direction of your teacher, float on your back in very shallow water (6"–1') gradually increasing both the length of time which you attempt to float and also the depth of water in which you float.	1. Evaluate your progress by the length of time which you are able to float. Have lifeguard or instructor time you, noting your progress.
AC-2. A child with Achondroplasia has the capacity to do a stroke in the water – in most cases a modified backstroke.	1. While your teacher is watching you, swim short distances on your back using the elementary backstroke. Gradually, try to swim longer distances.	1. Evaluate your progress by noting the distances that you are able to cover using a swimming stroke.

7. ACHONDROPLASIA

Water recreational activities provide a change of pace from merely doing strokes. The student seems less conscious of physical exertion when it is incorporated into a game and naturally is more receptive toward water activity. Also, the activity tends to build confidence in the student, as to his ability to maneuver through unconscious motions the student must make in the course of the game or activity.

The student will eventually have to master rhythmical breathing if he is to progress to more difficult strokes. Submerging the face is a good first step in this direction. A good teaching aid in this area is a pair of swimmer's goggles which allow the student to look under water and view clearly the pool bottom.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
ACHONDROPLASIA		
AC-3. A child with Achondroplasia is capable of swimming in a vertical position in the water using a dog paddle type of pull. At the same time, movement may be achieved by using a bicycling type of motion by the legs.	1. When your teacher is in the water with you, assume a vertical position in waist-deep water. Gradually, move into deeper water until you are floating in water deep enough so you are unable to touch the bottom. Attempt to swim using the strokes described in the concept under the supervision of your teacher.	1. Note your progress by your ability to float unaided in a vertical position. Have your swimming instructor or lifeguard note your mastering of the strokes by observing the distance you are able to cover and/or the length of time you are able to perform the strokes before tiring.
AC-4. A child with Achondroplasia is capable of recreational activities in the water.	1. Under the supervision of your teacher, participate in such activities as water basketball, with a very slightly elevated basket that floats in the water. Attempt to play in deep water so that you will be able to tread water and maneuver vertically.	1. Have your swimming instructor or lifeguard observe and evaluate your capabilities.
AC-5. You should not be afraid to go under water.	1. Under the supervision of your instructor learn to put your face in the water until you are comfortable doing so for approximately five or ten seconds.	1. Determine your progress by the length of time you are able to put your face in the water and the degree of fear you feel when doing so.
AC-6. You can put your face under water.	1. Pick up chips, coins, shiny objects, etc., from the bottom of the pool.	1. Evaluate your progress by noting the number of objects you can see and pick up with your face in the water.

7. ACHONDROPLASIA

This activity is designed basically to teach a child to breathe quickly and efficiently. The basic techniques he learns from this will be incorporated into more advanced strokes performed on his stomach later on. When the student first performs this activity it may be necessary for the instructor to support the child under the arms to aid him in going up and down through the water.

If a child is to be able to swim any distance, he must be comfortable with his face in the water, which means that he must be able to breathe rhythmically as well.

The primary benefit of this activity of bobbing is that it teaches the student to use his arms to control his body in the water. By having the student perform a scissor kick, the student also builds the musculature that is present in the lower extremities.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
ACHONDROPLASIA		
AC-7. It is possible to breathe rhythmically while alternating between being submerged and being above the water.	1. Under your teacher's supervision, go to an area of the pool that is over your head. Then, with an instructor's aid, alternately submerge yourself until your head is covered; then come out of the water until your chin is clear. This should be done in a vertical position, initially at the side of a pool using a ledge to aid you in going up and down. In addition, learn to exhale through your nose while under water and take a quick breath through your mouth when coming up for air.	1. Judge your progress by your ability to sustain a steady rhythm of alternately submerging yourself and then coming up out of the water. You should be comfortable in doing this activity 10–15 times consecutively.
AC-8. You can learn to breathe at a steady rhythm so that you are comfortable swimming longer distances.	1. Bob up and down in water that is chest deep for you, so that your head is submerged for the same duration as it is above the water.	1. Evaluate your progress by noting the number of repetitions you can perform comfortably at the various water depths.
AC-9. You should now use your arms to help you move up and down through the water. This is the first step in teaching students to control their bodies in the water by the action of the arms.	1. Bob up and down in the water and extend your arms laterally, and alternately push down hard against the water until your arms meet the side of your legs to raise yourself. Then by raising your arms above your head you will submerge. Perform a scissor kick with the legs to aid in lifting your head above the water.	1. Evaluate your progress by noting the number of repetitions you can perform comfortably at the various water depths.

7. ACHONDROPLASIA

When the child is first learning to scull it may be useful to use a flotation device around his waist to add greater buoyancy in the water and help keep him higher in the water.

Before the student learns either of these two strokes he must have mastered rhythmical breathing. Otherwise he will be unable to swim more than a few strokes without coming up for air.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
ACHONDROPLASIA		
AC-10. It is possible to control the position that the body will assume in the water by a sculling action of the hands and the direction in which the head is angled.	1. Practice sculling with your hands until you can put yourself on your back and stomach and return to a vertical position in the water. You should be encouraged and instructed to use your head in assuming these positions since the direction in which the head is angled controls the direction in which the hips and lower extremities will also move. (e.g. tucking the chin lowers the hips.)	1. Judge your progress by noting your ability to assume and maintain various positions in the water.
AC-11. It is possible to float on your stomach.	1. Float on your stomach under the supervision of your instructor.	1. Progress will be evident in your ability to float comfortably on your stomach and breathe when you desire and/or return to a vertical position.
AC-12. It is possible to swim on your stomach.	1. Ask your teacher to introduce you to either a breast-stroke or crawl stroke, stressing the arm phase and the mechanics of rhythmically breathing so as to be comfortable swimming a short distance.	1. Judge your progress by your ability to move through the water comfortably for short distances. Gradually, build up the distances you can swim.
CONGENITAL CARDIAC CONDITIONS		
Students with cardiac conditions should consult their physicians about swimming.		

9. HEMOPHILIA

The student with Hemophilia has the capacity and ability to master certain swimming techniques, if given proper care and instruction. In some instances, the instructor may have to modify basic swimming techniques to suit the needs and physical capabilities of the student. Swimming provides several basic needs for the Hemophilia student, e.g. (A) it provides valuable exercise, (B) it can build the child's confidence because it allows him to feel that he can compete with fellow students in the water, and (C) by learning the dog paddle or flutter kick he is given a good opportunity to stretch and lift his legs.

It is much easier for a student to master initially a stroke on his back since his face is out of the water and the student can be encouraged by the instructor while he is actually learning the stroke. Also, it is very easy for an instructor to help support a student doing this stroke by simply standing behind his head and lending a reassuring hand under the back. The elementary backstroke is very basic and in most instances can be learned rather easily. By having the student learn the stroke quickly it will build confidence when attempting to teach more difficult strokes later on.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
9. HEMOPHILIA		
H-1. With appropriate instruction, you can gain the confidence and competence to enjoy swimming in safety. (A) A child with Hemophilia has a capacity to float in the water with the aid of a vest (flotation device); (B) As your confidence increases, a child with your disability possesses the capacity to float on your back without any aid or floating devices.	1. Under the direction of your teacher, float on your back in very shallow water (6"–1') gradually increasing both the length of time which you attempt to float and also the depth of water in which you float.	1. Evaluate your progress by the length of time which you are able to float. Have lifeguard or instructor time you, noting your progress.
H-2. A child with your disability has the capacity to do a stroke – in most cases a modified backstroke.	1. While your teacher is watching you, swim short distances on your back using the elementary backstroke. Gradually, try to swim longer distances.	1. Evaluate your progress by noting the distances that you are able to cover using a swimming stroke.
H-3. A child with your disability is capable of swimming in a vertical position in the water using a dog paddle type of pull. At the same time movement may be achieved by using a bicycling type of motion by the legs.	1. When your teacher is in the water with you, assume a vertical position in waist-deep water. Gradually, move into deeper water until you are floating in water deep enough so that you are unable to touch bottom. Attempt to swim using the strokes described in the concept under the supervision of your teacher.	1. Note your progress by your ability to float unaided in a vertical position. Have your swimming instructor or lifeguard note your mastering of the strokes by observing the distance you are able to cover and/or the length of time you are able to perform the strokes before tiring.

9. HEMOPHILIA

The student will eventually have to master rhythmical breathing if he is to progress to more difficult strokes. Submerging the face is a good first step in this direction. A good teaching aid in this area is a pair of swimmer's goggles which allow the student to look underwater and view clearly the pool bottom.

For this activity, the instructor should evaluate the extent of the student's handicap and whether he is physically capable of performing such an activity.

This activity is designed basically to teach a child to breathe quickly and efficiently. The basic techniques he learns from this wiil be incorporated into more advanced strokes performed on his stomach later on.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
HEMOPHILIA		
H-4. You should not be afraid to go under water.	1. Under the supervision of your instructor learn to put your face in the water until you are comfortable doing so for approximately five to ten seconds.	1. Determine your progress by the length of time you are able to put your face in the water and the degree of fear you feel when doing so.
H-5. You can put your face under water.	1. Pick up chips, coins, shiny objects, etc., from the bottom of the pool.	1. Evaluate your progress by noting the number of objects you can see and pick up with your face in the water.
H-6. It is possible to breathe rhythmically while alternating between being submerged and being above the water.	1. Under your teacher's supervision, go to an area of the pool that is over your head. Then with an instructor's aid, alternately submerge yourself until your head is covered, then come out of the water until your chin is clear. This should be done in a vertical position, initially at the side of a pool, using a ledge to aid you in going up and down. In addition, learn to exhale through your nose while underwater and take a quick breath through your mouth when coming up for air.	1. Judge your progress by your ability to sustain a steady rhythm of alternately submerging yourself and then coming up out of the water. You should be comfortable in doing this activity 10–15 times consecutively.

9. HEMOPHILIA

If a child is to be able to swim any distance, he must be comfortable with his face in the water, which means that he must be able to breathe rhythmically as well.

The primary benefit of this activity of bobbing is that it teaches the student to use his arms to control his body in the water. By having the student perform a scissor kick when physically possible the student also builds the musculature that is present in the lower extremities.

When the child is first learning to scull it may be useful to use a flotation device around his waist to add greater buoyancy in the water and help keep him higher in the water.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
HEMOPHILIA		
H-7. You can learn to breathe at a steady rhythm so that you are comfortable swimming longer distances.	1. Bob up and down in water that is chest deep for you, so that your head is submerged for the same duration as it is above the water.	1. Evaluate your progress by noting the number of repetitions you can perform comfortably at the various water depths.
H-8. You should now use your arms to help you move up and down through the water. This is the first step in teaching students to control their bodies in the water by the action of the arms.	1. Bob up and down in the water and extend your arms laterally, and alternately push down hard against the water until your arms meet the side of your legs to raise yourself. Then by raisin gyour arms above your head you will submerge. If possible, try to perform a scissor kick with the legs to aid in lifting your head above the water.	1. Evaluate your progress by noting the number of repetitions you can perform comfortably at the various water depths.
H-9. It is possible to control the position that the body will assume in the water by a sculling action of the hands and the direction in which the head is angled.	1. Practice sculling with your hands until you can put yourself on your back and stomach and return to a vertical position in the water. You should be encouraged and instructed to use your head in assuming these positions since the direction in which the head is angled controls the direction in which the hips and lower extremities will also move. (e.g. tucking the chin lowers the hips.)	1. Judge your progress by noting your ability to assume and maintain various positions in the water.

9. HEMOPHILIA

Before the student learns either of these two strokes he must have mastered rhythmical breathing. Otherwise he will be unable to swim more than a few strokes without coming up for air.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
HEMOPHILIA		
H-9. It is possible to float on your stomach.	1. Float on your stomach under the supervision of your instructor.	1. Progress will be evident in your ability to float comfortably on your stomach and breathe when you desire and/or return to a vertical position.
H-10. It is possible to swim on your stomach.	1. Ask your teacher to introduce you to either a breast-stroke or crawl stroke stressing the arm phase and the mechanics of rhythmically breathing so as to be comfortable swimming a short distance.	1. Judge your progress by your ability to move through the water comfortably for short distances. Gradually, build up the distances you can swim.

Elementary Safety Module

Fire Safety

General – RULES FOR SAFE USE OF MATCHES

1) Close cover before striking.
2) Make sure match is out before throwing it away.

PROPER WAY TO LIGHT A MATCH

1) Pull match
2) Close cover
3) Strike away from body
4) Wet match after blowing it out.

DIFFERENT WAYS TO MAKE FIRE

1) Rubbing sticks together
2) Flint and stone
3) Matches

1. **Dysautonomia** – These children may not sense the heat of a match, nor will they feel the extremes of pain caused by a burn.

3. **Muscular Dystrophy** – These children have weak uppers and may not be able to strike a match properly (holding it away from the body and striking the match in that direction may be impossible). The actual experience of blowing out a match, or a candle is an excellent exercise for their lungs – in MD's the wall of the lung becomes weakened due to the disease. In the movement of forcing air out through their mouths to blow out a match, they are forcing their lungs to expand and contract.

4. **Arthrogryposis** – Little functional use of the hands makes the handling of matches especially dangerous for these children.

5. **Congenital Amputee** – The task of lighting a match is potentially dangerous for the disabled person who wears arm protheses. It is a necessary skill for independent living and ought to be executed safely. The child would not know, if he dropped a lit match on artificial limbs, that it was still burning and his clothes could catch on fire.

7. **Achondroplasia** – Children with shortened fingers may need extra practice with matches.

General – Disabled people may not be able to get out of the way if a fire or explosion occurs. They may not be able to wash out an irritant if they come in contact with one.

Volatile liquids are explosive-flammable liquids: gasoline, kerosene, anti-freeze, insecticide sprays, lighter fluid, carbon tetrachloride, ether, benzine, naptha.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Matches		
1. Fire hazards can be significantly reduced when students learn and follow simple safety precautions related to their special needs regarding: A) Matches B) Volatile Liquids C) Flammable clothing	1. Invite fireman to discuss what can happen when matches are not handled properly.	1. Write a story about a little boy or girl who plays with matches.
	2. Write a list of six reasons why you should not touch matches unless you have permission.	2. Read your list to the class and tell them what you have learned about matches.
	3. List rules for safe use of matches by those with lessened sense of touch.	3. Pick one of your rules and illustrate it.
	4. Ask your teacher to demonstrate the proper way to light a match remembering that you might not feel the heat.	4a. Make up a set of steps for lighting a match safely. 4b. Ask your teacher to watch you light a match.
	5. Cut out articles on fires started by matches.	5. Make candles in art class and demonstrate lighting them with matches.
	6. Do library research on ways to make fire, why we have matches, and how matches are made.	6a. Demonstrate how to make fire. 6b. Report on how matches are made and how they help us.
B. Volatile Liquids		
1. Disabled people should be especially careful of volatile liquids.	1. In science class study the characteristics of household organic materials which are A) flammable: oily rags gasoline benzene B) irritating ammonia chlorine	1a. Check out and make a consumer report on the commercial names for flammable cleaning liquids. Examine labels for chemical contents. 1b. Make a list of the common household items which are flammable or irritating.

1. **Dysautonomia** – Due to their poor coordination or unsteady walk these children should wear non-flammable materials for protection from fire.

2. **Spina Bifida** – These children would be less able to move quickly away from a fire because of braces, crutches, or wheelchairs.

3. **Muscular Dystrophy** – Ambulatory – in case their clothing caught on fire they could not move quickly and if they fell, they would need help getting up. Young MD children are unsteady and faltering in their gait. Because they easily lose balance, they may readily fall. If near a birthday candle, soup, etc., this could result in tragedy since once a child begins to fall, he is usually unable to save himself from falling. After the fall is completed, the child experiences great difficult getting up which could of course compound tragedy since he could not move away from danger he has fallen into. If child with MD is wheelchair-bound, someone would have to help him to move away from a dangerous area.

4. **Arthrogryposis** – These children would be less able to move away from a fire because of braces, crutches, or wheelchair.

5. **Congenital Amputee** – The child with missing limbs or artificial limbs would be less able to move quickly away from a fire.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
C. Flammable Clothing		
1. Disabled people should be especially aware of flameproof materials in order to avoid fire hazards.	1. Check your clothing to see what materials they are made of. (See inside labels.)	
	2. In science class, list flammable materials.	2. Ask your science teacher to demonstrate the difference between a flammable and a non-flammable material.
	3. Discuss what types of clothing to wear while cooking around a fire (barbeque, fondue, etc.).	3. Dress a doll the way you'd dress for cooking outside at a campfire, putting labels of material types in each garment.
	4. Take a field trip to a department store and look for labels on sleep wear to see if non-flammable materials are used.	4. Write to the head of a department store to tell what you have observed, either praising him or giving your opinion of unsafe items, depending on what you find.
2. Proper clothing can reduce your chances of being burned if you are near fire sources like birthday candles, hot foods, fireplaces or campfires. Proper behavior can help to minimize danger when flammable clothes are being worn.	1. Ask your science teacher to conduct an experiment with a doll to show what types of clothing are more flammable than others.	1. Imagine a birthday party you've been invited to, and tell how you'd blow out the candles if you were wearing an organdy dress or synthetic knit shirt.
	2. Dress a doll in what you'd wear to a campfire.	2. Put cards into a hat, labeling each card with a different fire situation (e.g. birthday party, campfire, etc.). Have each classmate take a card and describe how they'd dress and act there in order to reduce chances of being burned.
	3. Discuss proper attire for cooking at the stove. Ask science teacher to help you list the most dangerous clothing items and materials.	3. Make a collage of the things you should never wear while cooking. (e.g. long sleeved robes, nightgowns, etc.).

BACKGROUND INFORMATION FOR THE TEACHER

General – Three types of fire extinguishers:

1) water – for wood, paper
2) foam – for grease, oil
3) carbon dioxide – for electrical fires

1. **Dysautonomia** – The student should be knowledgeable about what services his community and local fire department offer in emergency situations.

2. **Spina Bifida** – These children may not be able to get out of bed by themselves, or may need to put on appliances before they can get out of their bedrooms. Firemen should be alerted to their presence in a home.

3. **Muscular Dystrophy** – Alternate ways should be made because these children can't always reach a phone or pull a lever (use of push button phones, etc.). Since his muscles are weak the child would need help placing the sticker on a door or window to make known to others (firemen) the presence of a handicapped person in the house who needs assistance getting out of the house.

4. **Arthrogryposis** – These children may be helpless once in bed, and most need braces in order to walk if they are capable of ambulating. Firemen must be aware of their presence in a house.

5. **Congenital Amputee** – These children may be helpless without their prosthetic devices. If this is the case, firemen must be alerted to their presence in a house.

6. **Osteogenesis Imperfecta** – These children may be in a cast after a fracture or an operation, or may simply be unable to move themselves out of the house in an emergency. An alert sticker is necessary for their protection in case of fire.

7. **Achondroplasia** – Phones, doors, etc. should all be at a level where the child can reach them easily and help himself in case of fire.

8. **Congenital Cardiac Conditions** – These children should be able to get out of the house by themselves in case of fire, but an alert sticker is a safety precaution. Shock or excitement could cause them problems during an emergency.

9. **Hemophilia** – An alert sticker will cover times when he has sustained an injury and cannot get himself out of the house easily.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
D. Community Efforts in Fire Protection		
1. The community and fire department help physically disabled people in special ways.	1. Invite a fireman to speak to the class about how to notify the fire department in case of fire.	1. Write a letter to the fireman and his supervisor, telling what you learned from the visit.
	2. List local people and agencies working for your protection.	2. Make a booklet with "Who's Who" descriptions of the people and agencies who help protect you against fire.
	3. Do library research on local laws and regulations designed for fire safety.	3. Present your research to the class in oral, taped, or written form.
	4. Write for stickers to put on your home to notify firemen that a disabled person lives within.	4a. If you do receive a sticker, have someone help you put it on the front door of the house. 4b. If you do not receive a sticker, write to your fire commissioner explaining their value.
	5. Survey fire detection equipment available to the homeowner.	5. Prepare a consumer listing of the best equipment available at various price ranges.
	6. Invite firemen to discuss and conduct experiments to acquaint you with the odor of fire (smoke) under controlled circumstances.	6. Put on a blindfold and have firemen test you for your sense of smell with regard to smoke. (Have him include more smells to see if you can tell which is the smoke.
	7. Ask firemen to give descriptions of the various kinds of fire extinguishers and their use, telling you if and how you should attempt to put out a fire.	7. Give demonstration for the class on the kinds of fire extinguishers.

General – COMMON CAUSES OF FIRE:

- children playing with matches
- flammable liquids
- lightning
- misuse of electricity
- spontaneous ignition – as in case of rubbish accumulation

Children in wheelchairs might have to be carried out of burning buildings. Proper instruction must be given to person carrying a disabled child.

Child playing with matches in a wheelchair can't get away from matches, weak arms can't hold matches away from body to light.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
E. Man-made Causes of Fire		
1. Awareness of the causes of fires can motivate the disabled student to take responsibility for preventing fires.	1. List causes of fires. 2. Current events – Bring in clippings on fires.	1&2. Analyze clippings on how fires started and how they could have been prevented.
	3. Have local fire department come in and demonstrate equipment, and special ways of carrying people.	3. Have local fire department evaluate the safety standards in school, classrooms and buildings. "Special" procedures may have to be devised.
	4. Write for fire safety lists and compare with #1.	
	5. Draw a cartoon series illustrating how fires can start from a child playing with matches.	5. Draw and hand out "before" cartoons of how fires start and have student draw a follow-up cartoon on how they could have been prevented.
	6. Invite a fireman to show you how to use a fire extinguisher.	6. Demonstrate how you would use a fire extinguisher.

1. **Dysautonomia** – Smoke inhalation could cause respiratory distress. In addition, the child may fatigue easily and therefore needs the shortest, and least exerting fire exit available. Since the child may be prone to unstable emotions, a routine to assure anxiety-free exit from a fire situation is most important.

2. **Spina Bifida** – The child may need assistance in putting on appliances for walking or in getting out of bed. In an emergency all unnecessary steps must be eliminated from preparation for exiting; a set routine should be established by the family of the child.

3. **Muscular Dystrophy** – The child in a wheelchair cannot get himself out of the house and down any steps alone. He will need an adult to push him or take him down the steps. An ambulator is not steady on his feet and is incapable of fast movement. Therefore, he too, will need an adult to guide or carry him out of the house. Because of the nature of this disability (gradual deterioration possibly beginning at age 5 or 6) neighbors may be unaware that a handicapped person resides in that house, thus making it doubly important to identify problems. Special adaptations for using the telephone may be necessary for the child, since his muscles may be too weak to dial or hold the phone.

4. **Arthrogryposis** – Since most children cannot get themselves out of bed and out of the house quickly, their families must devise emergency procedures for their exit.

5. **Congenital Amputee** – Depending upon the prosthetic devices needed to ambulate, special emergency procedures should be devised so that the amputee and his family have a routine planned for his safe exit during a fire.

6. **Osteogenesis Imperfecta** – These children should plan emergency exit procedures for times when they are in casts as well as when they are not. (Two people may be needed to move a child in a body cast.)

7. **Achondroplasia** – A home should be adapted to the needs of this child so that his size does not hinder him from functioning efficiently in an emergency.

8. **Congenital Cardiac Conditions** – This child needs to know the shortest possible route to safety. The more fire drills that are held in the home, the less chance there is for utter panic and confusion in case of a real fire. These children should have a familiar routine of fire escapes, so as to lessen chance of shock.

9. **Hemophilia** – This child should be able to get out of the house unassisted if he has not sustained a recent injury. Emergency procedures should cover situations where an injury has left him helpless.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
F. Proper Procedures to Follow in Case of Fire		
1. Proper, safe exiting procedures should be prepared for wheelchairbound and ambulatory students to follow in case of fire at home.	1. Talk to your parents and decide on the best exit for you in case of fire. Make your own fire code of procedures for your exit.	1. Have a fire drill using the code you've prepared.
	2. Talk to friends with disabilities similar to yours and see if they have a plan for exit in case of fire.	2. Share your fire code with friends who have not developed one of their own.
	3. Discuss the need for a telephone in your room, weighing the pros and cons with regard to getting help in case of fire.	3a. Prepare a list of the pros and cons of a telephone for your room, including such things as cost, value in case of emergency, etc. Include information on types of phones (dial vs. pushbutton, etc.). 3b. If you decide to get a telephone for your room, prepare a routine for calling for help in case of a fire.

BACKGROUND INFORMATION FOR THE TEACHER

General – Wheelchair students, whether able or unable to push themselves, should have one person and an alternate assigned to them for fire drills.

A buddy system during a fire drill can be especially advantageous to his safety.

1. **Dysautonomia** – His unsteady gait necessitates special precautions during a fire drill. (e.g. staying one behind the other; not pushing or shoving, being careful not to trip over obstacles or other students, etc.).

3. **Muscular Dystrophy** – These children in early stages may fall and be unable to get up. Those in later stages will need help in order to move quickly, since even children who can push their own wheelchair will be slow.

5. **Congenital Amputee** – A child with artificial or no upper extremities may not be able to turn door knobs. They therefore need exits with levers or doors that can be pushed. Exits must be constructed in such a way that a wheelchairbound child without arms can use alternate means of opening the door.

6. **Osteogenesis Imperfecta** – Most children are in wheelchairs. Often they are on litters and wearing casts after operations or fractures.

7. **Achondroplasia** – These children could push a wheelchairbound student during a fire drill.

8. **Congenital Cardiac Conditions** – School medical personnel can decide whether or not a child can push a classmate during a fire drill.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
G. Accommodations and Precautions at Home		
1. Obstacle-free hallways, exits, and staircases are necessary for your safety in making an exit during a fire at home.	1. Discuss why obstacles blocking or carelessly lying about the route you would take during a fire drill can be especially dangerous for you.	1. Take a survey of the school halls, and doorways, noting all obstacles, carelessly lying about, presenting hazards.
H. Accommodations and Precautions at School		
1. There are proper, safe procedures for a) wheelchairbound and b) ambulatory students to follow in case of fire in school.	1. Discuss the role and importance of a school fire drill.	1a. Design slogans for posters to be placed around your school, encouraging students to "clean-up" the hallways and not leave obstacles around to cause accidents. 1b. Issue summonses to people (if known) responsible for the obstacles or appoint a committee, with you in charge to go around and remove the obstacles for future safety.
	2. Draw a floor plan of your school building and mark out the best route for you to take for a fire drill, marking exits in red.	2. Students in wheelchairs will be observed and timed by another student in getting out of the building by his route mapped out for a fire drill.
	3. Students will pair up and observe a school fire drill; how long it took, what mistakes occurred, what correct procedures were carried out, and how it could be improved.	3. In cooperation with the principal, run a School Fire Drill – to see improvements.
	4. Discuss the use and importance or ramps during a fire drill for a child in a wheelchair.	4. Role-play how students should go up or down ramps correctly during a fire drill.
	5. Discuss the need of a reliable buddy system for students unable to push their wheelchair during a fire drill.	5. Choose a buddy you can depend on and who is willing to assume the responsibility of pushing you out of the school building during a fire drill.

General – While much time can be consumed while attempting to escape, the child must be aware that nothing is worth saving except himself. All material objects can be replaced. Hopefully, if the child is taught to think logically in "pretend" and "practice" situations, this logic will be transferred to reality if necessary. By practicing various techniques, i.e., walking holding the wall if he wishes to go more quickly, he will have confidence to bring to a new and threatening realistic situation.

Immediate exit is important because inhalation of smoke or "super-heated" gases which replace oxygen in the body can cause death before fire reaches you.

1. **Dysautonomia** – These children often exhibit infantile or immature behavior and will benefit from a set pattern which will leave few decisions to make when leaving the house or school in an emergency.

5. **Congenital Amputee** – Children who use prostheses must be trained to stop only for necessary appliance in case of fire during the night. The laborious process of putting on an unnecessary prosthesis could cost a child his life when there is a fire.

General – SAFETY RULES:

1. Don't race wheelchairs.
2. Don't bump wheelchairs into each other or into ambulators.
3. Make sure seat belt is locked.
4. Stay to the right one behind the other, when going through the halls.
5. Don't block doorways or hallways.
6. Don't loiter. Go directly out the proper exit.
7. Halls should be cleared of obstacles.
8. If you need it, make sure someone is pushing you.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Carrying your possessions with you as you leave a burning building could slow you down or cause a fall that would make you less likely to get out safely.	1. Write a story that starts with these words: "Mike smells smoke and can see fire in the next room. He stops for certain things before leaving the building."	1a. Look at everything Mike stopped for and discuss which was really essential and which was not. 1b. Put down all kinds of things a child would stop for in case of fire. Make "Go Fish" cards and play a game where each person picks a card and acts out stopping for the item. See how many you can rip up as not worth stopping for. 1c. Make a list of the things you decided were not worth stopping for, even though you would like to save them.
3. During a school fire drill, wheelchair students must observe special safety rules.	1. Discuss safety rules for wheelchair students to follow during a fire drill.	1a. Make charts or posters illustrating wheelchair safety rules for fire drills. 1b. Ask another student to observe you during a fire drill and see how well you follow the safety rules for wheelchair students. 1c. Prepare a student handbook giving the reasons for fire safety rules that wheelchair students should follow and listing each of those rules.

1. **Dysautonomia** – The child may be in a wheelchair because of dizzy spells, though he can walk.

3. **Muscular Dystrophy** – The child in a wheelchair if he can still push himself, would be slow. If he was pushed, he could then direct the person pushing to the nearest exit.

7. **Achondroplasia** – A wheelchair should not be necessary for this child.

8. **Congenital Cardiac Conditions** – The child who is fatigued may be put into a wheelchair temporarily.

General – CARE OF A WHEELCHAIR:

1) Maintain adequate lubrication.
2) Have repaired all loose or broken parts immediately.
3) Make sure tires and spokes are in good condition.
4) Make sure seat belt is strong.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
I. **Wheelchairs**		
1. A wheelchair must be kept in good condition so that in case of emergency (such as fire) it can be depended upon to function properly.	1. Illustrate cartoons showing catastrophies that could occur if your wheelchair or some part of it failed to function properly.	1. Discuss how to take care of a wheelchair so that it always is operating at its best.
	2. Discuss why it is especially important for a wheelchair to be in excellent condition in case of emergency or fire.	2. Set up a timetable for checking your wheelchair and its parts. Decide how often to check it and, with help of someone else, check each part as to how well it is performing. Record this information on your table, keeping up with the checkups and having needed repairs made.

Elementary Safety Module

Home Safety

BACKGROUND INFORMATION FOR THE TEACHER

General – An orderly home kept free of hazards is essential for those who experience dizzy spells and have an unsteady gait.

Reasons for falls:

- poorly lighted or cluttered stairs
- spilled liquids not wiped up
- loose scatter rugs
- steps without handrails
- wet floors
- highly polished floors
- icy walks

Falls account for 50% of accidental home deaths.

1. **Dysautonomia** – Children tend to have "weak spells and dizziness" due to labile blood pressure and are very unsteady on their feet at times.

2. **Spina Bifida** – Children experience home accidents due to falls because of inability to stop a fall, if they are braced fully.

3. **Muscular Dystrophy** – Weakened leg muscles cause falls over small rugs, toys or staircases. As the MD advances, the child begins to fall for no apparent reason. In more advanced cases the students will be in wheelchairs. An adult can help a child to his feet by standing behind the child, putting his arms around the child's chest, not just under the arms.

4. **Arthrogryposis** – Since joints are stiff, there is no lifting movement at the knee. Lack of flexion magnifies dangers of throw rugs, slippery floors, or door moldings. Stiffened leg joints may cause child to stumble over even slight floor elevations.

5. **Congenital Amputee** – The person walking on artificial limbs is more prone to falls and benefits from reduction in obvious safety hazards on floors. Children with congenital amputations may progress through various types of prostheses as their balance develops, some with feet backwards to help maintain a balanced position. A hazard-free house will help to minimize the inevitable falls that accompany learning to walk.

6. **Osteogenesis Imperfecta** – Special hazards to a child with brittle bones include: waxed floors, bathroom floors, shower floors, tub floors, stairs poorly lighted, without carpet, without railings; winter outside – icy walks without sand or salt, steps or curbs without railings, articles left out on floors.

7. **Achondroplasia** – Since he is unable to reach many objects above him, falling from stools and ladders is a constant threat to the student.

8. **Congenital Cardiac Conditions** – Removing obstacles and correcting areas which encourage falls would provide for a safer, calmer environment for the student, thereby reducing some of the causes of shock reaction.

9. **Hemophilia** – A fall can trigger internal bleeding for these students.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Falls		
1. Injury from falls can be minimized by special precautions related to your disability.	1. Prepare a checklist for home use, indicating areas of possible danger.	1. Write six safety rules to be shown to your parents. State safety hazards in the home that could be eliminated.
	2. Build (in art class) a model of a room in your home, using rugs and furniture, and show how the room could be arranged to prevent falls.	2. Give an oral report and demonstration of your model, warning others of dangers of poorly placed furniture and rugs.
	3. Look through magazines and newspapers for articles on falls in the home.	3. Put articles into a booklet or folder, including a summary of the most common falls.
	4. Look up statistics of numbers of home accidents due to falls.	4. Make a chart or graph showing the relationship of falls to the ages of the victims.
	5. Prepare a skit, using puppets made in art class, and cover the dangers of rough playing, unfastened seat belts, playing near stairs, etc., for those in wheelchairs.	5. Put on your skit for others in the class.

1. **Dysautonomia** – Students cannot feel pain from cuts, bumps or bruises and must learn to use their sight in order to detect injury.

2. **Spina Bifida** – Children may cut, bruise or injure their lower extremities and due to a lack of feeling or sensation it may go unreported and/or unnoticed.

3. **Muscular Dystrophy** – Cushioning will help to minimize injury from the constant falling of the child who has not yet gone into a wheelchair.

4. **Arthrogryposis** – Falls may be frequent when home hazards are not eliminated for children who cannot reach out to break a fall.

5. **Congenital Amputee** – Children will fall when learning to walk on artificial limbs.

6. **Osteogenesis Imperfecta** – A fall can cause fracture to brittle bones, resulting in weeks of hospitalization and casts for brittle-boned children.

9. **Hemophilia** – Carpet will help to lessen the trauma of the fall, thus helping to keep bleeding to a minimum, should the child fall.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Carpeted floors will cushion a fall and minimize the chance of injury for the disabled child.	1. Investigate energy absorption and cushioning of shock in Math class.	1. Prepare a report based on the study of carpet benefits. Draw some conclusions about the benefit of carpets at home.
	2. Invite a carpet salesman in to talk about falling on a carpet and its role in softening the impact of a fall.	2. Use carpet samples to set up displays depicting uses at home. (e.g.: kitchen, bathroom, playroom) accompanied by a written or taped commentary.
	3. Take a field trip to a carpet store and talk to the salesman about benefits.	3. Primary grades: Make a doll house with carpeted rooms. Display with taped or printed description of carpet benefits.
	4. Survey all the student population to see how many broken bones have resulted from falls on bare floors as opposed to carpeted ones.	

General – HARRIET HOUSEKEEPER

Materials

a white sock
b dacron stuffing or shredded nylons
c 2 buttons for eyes
d 1 red felt-tipped marker for mouth
e 1 black or brown felt-tipped marker for eyebrows and hair
f string to tie neck
g 1 triangle of fabric for scarf

Directions

a stuff tip of sock for head

b tie neck with string, leaving room for finger to stick into head for support

c sew on button for eyes

d draw on eyebrows, mouth, and hair with marking pens (use indelible marking pen)

e tie scarf around head like a baboushka

To use

Insert index finger into head. Use thumb and middle finger to move arms.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
3. Neat homes will present fewer hazards than cluttered, disordered ones.	1. List all of the things commonly left out on the floor. (e.g. toys, games, newspapers, etc.)	1. Make posters, charts, etc. on commonly left out items.
	2. Make a "Harriet Housekeeper" puppet who can check on your classmates during "Show and Tell" or some other classroom time.	2. Use "Harriet" to discuss home hazards with your classmates, suggesting areas where things could be neater and safer.

7. **Achondroplasia** – Because of inability to reach objects at higher levels from his standing position, the student may make frequent use of stepladders and/or large blocks and therefore needs to know the proper way of using them so as to prevent falls.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
CONGENITAL AMPUTEE		
CA-1. Proper ways of falling can minimize injury to those walking on artificial legs.	1. Ask a therapist to demonstrate techniques of falling from artificial legs.	1. Use video-tape to show how one should fall in order to prevent injury.
	2. Invite people who wear artificial legs to show how they handle a fall.	2. Make an illustrated booklet with step-by-step instructions for the beginner.
ACHONDROPLASIA		
A-1. Special precautions are necessary when using a step ladder to reach objects at a level too high to be reached from a standing position.	1. Illustrate with cartoons the hazards you may encounter when you use a chair or stool to help you reach higher levels.	1. Collect magazine pictures of the types of ladders or stools you should use when you need to reach somethings.
	2. Play-act the dangers that could occur when you stand on different objects to help you reach higher levels.	2. Demonstrate how you should properly and safely use a step ladder to aid you in reaching high objects. Include how the ladder should be secured in place, where and how you reach and carry objects on the ladder.
	3. Make a collage of magazine pictures showing objects of furniture you should *NOT* stand on when reaching for objects on a higher level.	3. Discuss why these should not be used and what could happen when used.

BACKGROUND INFORMATION FOR THE TEACHER

1. **Dysautonomia** – Due to his insensitivity to pain, the student will be unable to tell when an electric appliance is getting too hot to handle.

2. **Spina Bifida** – The lower extremities are insensitive to pain and therefore could be burned unknowingly.

3. **Muscular Dystrophy** – Weakened muscles make movement slower, so the children cannot get their hands away from a burn situation as quickly as others can.

4. **Arthrogryposis** – Due to stiffened joints the child may be "clumsy" in handling objects making it hazardous for him when handling hot objects.

5. **Congenital Amputee** – Students with deformities or prostheses for upper extremities must learn how to handle themselves in a kitchen, so they can prepare meals, and avoid burns and other accidents.

6. **Osteogenesis Imperfecta** – Some children develop bone deformities in their arms from fractures, and may have difficulty holding onto certain appliances.

8. **Congenital Cardiac Conditions** – Lowered resistance to infections would make a severe burn doubly serious. The distress caused by the pain of burns must also be prevented.

9. **Hemophilia** – Burns are especially dangerous to these children.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Burns and Scalds		
1. Electrical equipment can make life easier for the disabled person, but can cause burns and scalds if not handled properly.	1. List all of the electrical appliances in the home that can cause burns. (e.g. irons, toasters, heaters, fry pans, etc.)	1. Demonstrate the proper handling of the items on your list.
	2. Have home economics teacher demonstrate the different parts of the electric stove and give warnings about some of the most common home accidents that happen around the stove.	2. Make a safety handbook for the beginning cook, listing common accident situations caused by the use of the stove.
	3. Ask your science teacher to discuss various foods that have a low melting point and can burn easily.	3. Make a slide presentation of foods that can easily cause burns in the kitchen.
	4. Discuss all of the plastic items used in the kitchen. Have your science or home economics teacher help you experiment on what happens to such items when left on a hot stove.	4. Cut out pictures of common plastic items and make a collage of them. Display with photographs of what your experiment showed about leaving them on a hot stove.

General – Medication must be taken only if prescribed by the physician. Children who take medication on a regular basis should know what the medicine is and why he is taking it.

1. **Dysautonomia** – Because these children need medication for their disability, it is important that they know the correct way of taking it, as well as the dangers of taking medicine improperly.

2. **Spina Bifida** – These children often take medication for bladder infections.

3. **Muscular Dystrophy** – These children often take medication for complications related to their disability and therefore need to know the proper way of taking medicines, as well as the dangers of taking medication improperly.

General – All children must be aware of the dangers of tasting, smelling, or mixing unknown substances found at home.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
C. Poisoning		
1. Children should learn about the dangers of taking medication without a doctor's prescription.	1. Discuss the different kinds of medication you take because of your disability, as well as those you take for other health reasons (e.g. flu, virus infections, etc.). Invite a nurse or doctor to give information on the consequences of misusing those medicines.	1a. Have a class debate on the pros and cons of deciding which of your old prescriptions to take for an illness rather than call the doctor for a new kind of recommendation. 1b. Give a demonstration on the correct use of the medication you take for your disability.
2. Many household items can seriously hurt or even kill you if handled improperly.	1. Look through cabinets at home for cleaning items labled "poisonous." Have your teacher identify those which are poisonous but are not clearly labeled as such.	1. Make a poster of the most common household items which appear to be harmless but are poisonous.
	2. Set up a display table of the household cleaners, detergents, etc. (using only empty, rinsed out bottles) that could be harmful to you. Make a large "POISON" sign to hang above the display.	2. With a classmate, give an oral report on the materials in your display and tell of the dangers of mixing different cleansers, leaving poisonous items within the reach of babies, etc.

1. **Dysautonomia** – The student tends to fatigue easily and therefore is greatly benefited by any means which lessens his work safely.

2. **Spina Bifida** – Wheelchair children will be able to use many kitchen aids if counters are lowered to wheelchair height. Labor-saving devices will conserve energy needed to push a wheelchair or walk with braces and crutches.

3. **Muscular Dystrophy** – Weakened arm muscles make work very difficult.

4. **Arthrogryposis** – Electrical appliances will help the child perform tasks he might not be able to master without them.

7. **Achondroplasia** – Smaller stature can be compensated for by the devices and tools, thus conserving energy for other tasks.

8. **Congenital Cardiac Conditions** – Electrical energy saving appliances help to conserve his valuable energy and cut down on fatigue.

9. **Hemophilia** – Electrical aids to save energy will help him to keep his strength for other tasks.

General – A child in a wheelchair would not be able to reach outlets on the floor and could be tempted to pull on a wire. An ambulatory child with braces and crutches could lose his balance reaching down for a cord. (The same is true for outlets placed too high for the disabled child to reach.)

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
D. Electrical		
1. Electricity makes work easier and conserves energy for the disabled person.	1. Discuss the kinds of electrical appliances we use every day to make life easier.	1. Write a story on the kind of day you'd have in the kitchen or garden of an American pioneer as opposed to that of a 20th century individual.
	2. Cut out pictures of appliances and electric tools.	2a. Make a display of the pictures you've collected, explaining how each one helps you to conserve valuable energy and save work time. 2b. Use pictures to make cartoons showing how frazzled we'd be at the end of a job if there weren't for certain electrical helpers.
2. The electrical appliances a disabled person uses should be plugged into outlets he can easily reach.	1. Discuss what could happen if you pulled on the wire when removing a plug from the socket.	1. Make slides illustrating the correct way of plugging and unplugging electrical cords.
	2. Discuss your experiences with shocks from removing plugs the wrong way.	2. Make drawings of people getting shocks from plugs, and put captions telling what is happening to them.

General – Good lighting is necessary so that the ambulatory child will not stumble or fall over objects on the floor and the wheelchair child will be able to see where he is going.

General – Those in wheelchairs should use a lapboard on which to hold an appliance.

1. **Dysautonomia** – Because students are insensitive to pain, it is important that they know what appliances heat up so that they should not be touched or handled without protective measures.

2. **Spina Bifida** – Insensitive lower extremities can be easily burned without the youngster knowing that he has been burnt.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
3. Electricity is valuable in preventing accidents from occurring in the home of a disabled person.	1. Role-play what it would be like to walk or ride in your wheelchair if there were no lights in your house. What areas would be especially hazardous to you?	1. Make a shoe box display of a home, showing where light fixtures are needed and what types would be more accessible for your use. (e.g. light switches on wall, chain switches, tall pole lamp, etc.)
	2. Draw a floor plan of your home and illustrate where good lighting is essential for your safety.	2. Make a bulletin board display of photos showing good and bad lighting for areas in your home.
	3. Write to the Electric Company requesting information on the safest means of lighting a house for a disabled person.	
4. It is hazardous for you to hold in your lap any electrical appliance that becomes hot after a period of time.	1. Discuss what happens to various electrical appliances after they are turned on, noting those that get hot after a time.	1. Collect pictures of the electrical appliances that become very hot and make a collage of them, explaining in captions how they can be safely used.
	2. Bring in various appliances discussed in activity #1 and make guidelines for safe use.	2. Take slides or photos of your demonstration of safe use of the appliances you've noted. Present them to the class.
	3. Do research to find what the heating temperature of specific electrical appliance is and what a burn received from an object heated to that temperature would be like.	3. Invite school nurse to explain first aid to be given to a child who is burned by one of the appliances noted. Do a report on what you learned from the presentation.

BACKGROUND INFORMATION FOR THE TEACHER

2. **Spina Bifida** – An electrical shock may cause one who is on crutches or braces to lose balance and fall, while the child is in a wheelchair he is unable to move away from the source of the shock if he is holding it in his lap.

3. **Muscular Dystrophy** – An electrical shock may cause one who has an unsteady gait to lose balance and fall, while the child in a wheelchair is unable to move away from the source of the shock if he is holding it in his lap.

4. **Arthrogryposis** – An electrical shock may cause one who is on crutches and wears braces, to lose his balance and fall.

5. **Congenital Amputee** – An electrical shock may cause the child who is on artificial limbs to lose balance and fall.

6. **Osteogenesis Imperfecta** – An electrical shock may cause the child who is on crutches or braces to lose balance and fall, while the child in a wheelchair is unable to move away from the source of the shock if he is holding it in his lap.

8. **Congenital Cardiac Conditions** – The shock reaction of an electrical shock is hazardous to the child.

1. **Dysautonomia** – Due to dizzy spells and unsteady gait, exposed electrical cords lying about on the floors are extremely hazardous for the student.

2. **Spina Bifida** – Walkers on crutches can trip over cords and hurt themselves and wheelchair students can become entangled with the cords as well as have difficulty moving the wheelchair over them.

3. **Muscular Dystrophy** – Unsteady ambulatory students can trip over cords and hurt themselves and wheelchair students can become entangled with the cords as well as have difficulty moving the wheelchair over them.

4. **Arthrogryposis** – The stiff-legged gait of the student makes him more apt to trip over a wire or cord left in his way.

9. **Hemophilia** – Any hazard that could cause a fall is extremely dangerous for the student.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
5. Care must be taken never to handle electrical appliances with wet hands.	1. Ask your teacher to describe the kinds of things that can happen to you from using electrical appliances when your hands are wet.	1. Put the names of various appliances onto flash cards. Play a game with the class, each pulling a card and telling what they would do if their hands were wet. (Include non-electric items.) Have teacher help to settle any arguments over right and wrong answers.
	2. See if you can get any pamphlets from the electric company or the major appliance manufacturers describing the dangers of wet hands for appliance users.	2. Make a list of the appliances that should never be handled with wet hands.
6. Electrical cords lying about floors can cause accidents in the home, and are especially dangerous to disabled people.	1. Draw illustrations showing how wires can be hazardously exposed.	1. Revise illustrations, showing how to correct exposed wires and display your illustrations on a bulletin board.
	2. Make a survey of exposed wires in your home and draw up a floor plan showing where the wires are now as opposed to where they could be placed so as to avoid accidents.	2. Try to correct the exposed wires by suggesting to an adult ways to reroute them so as to keep them out of your way.
	3. Discuss why electric cords can be dangerous to you. (Include the possibility of shocks as well as your traveling over them.)	3. Draw cartoons showing what accidents involving electric wires could happen to you.
	4. Write a story on an accident occuring in the home involving electric wires.	4. Role-play your story for the class to help them become more aware of the kinds of home accidents electrical wires can cause.

5. **Congenital Amputee** – A functional hook could cause additional damage to an electrical cord in addition to the harm caused by pulling a plug out by its cord.

General – First-aid and survival may consist of having an immediate supply of oxygen always on hand, or an intercom system to call for help, or an elaborate plan of telephone checkups.

For those who could afford it, closed circuit television would be a means of watching over helpless children.

1. **Dysautonomia** – Since disabled children are often confined to bed, it is essential that they have some means of communication with their parents if an emergency occurs while they are alone in their room.

2. **Spina Bifida** – Without his braces and crutches or his wheelchair he may be unable to get out of his room. He may be confined to his bed until someone assists him in getting out.

3. **Muscular Dystrophy** – The child is essentially helpless once in bed, and must be able to get help if he needs it during the night. Only those in very early stages can get out of bed independently, and ambulators who fall while trying to get out themselves may not be able to lift themselves from the floor.

4. **Arthrogryposis** – Stiffened joints make independent movement out of bed impossible for the child.

5. **Congenital Amputee** – Children without limbs may have difficulty getting help once their prosthesis are removed for the night.

6. **Osteogenesis Imperfecta** – Children with brittle bones spend much of their early lives in casts, either after fractures or rodding operations.

9. **Hemophilia** – The child may be immobilized by an area where recent bleeding has taken place.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
CONGENITAL AMPUTEE		
CA-1. Proper procedures for grasping plugs will minimize danger of cord damage by those with artificial arms.	1. Have therapist demonstrate correct way of pulling out plugs. Discuss dangers of incorrect handling of electrical cords.	1. Make a poster titled "DO YOU DO THESE DANGEROUS THINGS?" Show incorrect methods of pulling plugs. Illustrate correct way.
	2. Practice pulling out cords under supervision of therapist.	2. Demonstrate correct methods for class, using puppets.
E. Miscellaneous Home Hazards		
1. Anyone who is not mobile should have a means of calling for help during the night.	1. Role-play situations where emergencies occur at night (e.g. broken lamp, broken window, fall from bed, etc.). Think of things that could happen where your parents should be notified, then act out getting help for yourself.	1. Compile a list of methods that could be used to notify your parents in case of an emergency.
	2. Discuss alternate ways of notifying parents if calling for help doesn't bring response. (e.g. horn, bell, intercom, etc.)	2. Make up display charts with suggested items. Prepare a display using the items themselves.
	3. Use class suggestions to compile a list of accommodations or devices for parent notification during an emergency.	

BACKGROUND INFORMATION FOR THE TEACHER

General – An outline can be given to the students to get them started:

Kitchen:

1. Maintain clean dry floors.
2. Keep handles of cooking utensils inward on stoves.

Bathroom:

1. Use non-skid shower mats.
2. Mark poisons and keep out of reach of children.

Halls and Stairways:

1. Use hand rails.
2. Check that bannisters on stairs are strong and securely fastened.

1. **Dysautonomia** – Pain may not be felt when an injury occurs. Eyes are sensitive due to lack of tears and vulnerable because blinking may not take place.

2. **Spina Bifida** – Partial paralysis of lower extremities necessitates crutches and braces for most children to ambulate. Falls are a constant danger.

3. **Muscular Dystrophy** – The tendency to fall during early stages is a constant danger. Wheelchairs used by older children make stairs a hazard.

4. **Arthrogryposis** – The stiff-legged gait of these children makes falls a danger; stiff arms may not break a fall well.

5. **Congenital Amputee** – Falls are a danger for those who walk on artificial limbs or use arm prosthesis which cannot break a fall.

6. **Osteogenesis Imperfecta** – An accident resulting in a bump or jolt could fracture the fragile bones of this child.

7. **Achondroplasia** – Small stature will limit reach of these children, who should function normally in most respects.

8. **Congenital Cardiac Conditions** – Care should be taken to minimize exertion in the home.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Specific accommodations must be made to minimize the possibility of accidents in your home.	1. Choose a part of the home to concentrate on and make a list of hazards and safety rules to cover them.	1. After gathering information, compile all rules into one basic chart.
	2. Make a model of a house and label all of the hazardous areas.	2. Discuss ways of checking the hazards labeled and eliminate it.
	3. Collect pictures from magazines of homes and mark the hazards you find in them.	3. Write a sentence telling how to correct the hazard or eliminate it.
	4. Taking the letters from the word KITCHEN, begin a sentence with each letter telling a hazard to beware of there.	4. Do the same with the words: BATHROOM, BEDROOM, PLAYROOM, etc.
	5. Report a real home accident you read about or which happened to someone you know (including yourself).	5. Make and show slides on home safety to show how the accident could have been prevented.

1. **Dysautonomia** – These children often cannot distinguish heat from cold. Special preventive measures include: temperature control of environment, caution about very hot food and drink, have someone else run the bath water or use a bath thermometer, and keep away from radiators, hot pipes, and fireplaces. It would be better to avoid activities like barbecueing because the heat from an open fire is desseminated so widely. In addition, the smoke could cause problems for the eyes and for breathing.

5. **Congenital Amputee** – Since the prosthesis is a foreign object on the body a whole new series of motions and controls must be learned in order to handle electric appliances like can openers, blenders, toasters, etc. Such items can serve as tremendous time and energy saving kitchen aids, but require training for proper safe use.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
DYSAUTONOMIA		
D-1. Special precautions against burns are necessary for those who cannot distinguish between hot and cold.	1. Make your special project learning how to use a stove safely.	1. Practice using well-insulated mitt potholders to remove pots from stove and pans from an oven.
	2. Bring to class various kinds of thermometers to test the heat of food, bathwater, etc.	2. Practice using them and reading them.
	3. Make a survey and write down the location of radiators, heating or hot water pipes, hot air ducts, in your home and in school.	3. Make a list of precautions which can help you avoid burns from these special hazards.
	4. Practice reading a room thermostat and setting it at the temperature recommended by your physician.	4. Check your home thermostat and thermometer each day to see if they are functioning properly.
	5. Make a list of foods which might burn your mouth and then list methods by which you could tell if something was too hot. (e.g. Observe the steam rising from soup, cocoa, etc. Ask someone else to test the cup and cautiously sipping a spoonful.)	
CONGENITAL AMPUTEE		
CA-1. Proper training and instruction are necessary for safe handling of kitchen utensils by those with arm prosthesis.	1. Invite an occupational therapist to help you plan a list of essential cooking items and procedures for their use.	1. After your list of tasks has been mastered, present a demonstration of skills mastered, telling why each one was chosen as basic for cooking.
	2. Make a graph on which to chart progress you make with the therapist.	2. Do a written project report on planning, learning, and utilization stages.
		3. Make a poster with pictures of kitchen tools cut from magazines. Put captions explaining why each is basic for cooking. Title: "YOU'VE GOT TO USE THESE TO COOK – CAN YOU USE THEM SAFELY?"

6. **Osteogenesis Imperfecta** – Additional damage to fragile bones could be caused by a fall from bed. Children who normally sleep upstairs may be temporarily moved to a roll away bed or cot on the ground floor of the house. Anyone who is rendered helpless by a large cast is safer sleeping in a secure bed next to a wall. The condition will stabilize with the coming of adolescence, finally disappearing and leaving no fragility of bones.

7. **Achondroplasia** – Bathroom sinks, tubs, and toilets can be lowered for their use if possible. However, if not, sturdy stools or benches to stand on should be provided. Handrails along the side of tubs and toilets are a necessity to prevent falls.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
OSTEOGENESIS IMPERFECTA		
OI-1. A person in a cast should sleep in a bed that will not roll or slide away from the wall and cause the risk of his falling out.	1. Invite older Osteogenesis Imperfecta students to come to class and recount their experiences with casts and bed accommodations.	1. Prepare a demonstration of what could happen to a cast-bound person whose bed rolls away from the wall during the night. Use an older student whose condition has stabilized to act in the demonstration.
	2. Interview older students, asking for tips on safe sleeping accommodations for those in a cast.	2. Make a sequence of drawings to show what could happen to a cast-bound person on a rolling bed. Accompany with a written description or cassette tape.
	3. Invite to class or interview and tape record for class a nurse, physician, or therapist to get professional advice on cast accommodations.	
ACHONDROPLASIA		
A-1. Special accommodations should be made in your bedroom and bathroom to enable you to easily reach objects above your own height, and frequently used objects should be placed on lower levels.	1. Start a program to move toys, games, clothing, etc. to lower shelves or drawers in your room. (Desk may be lowered by cutting off legs.)	
	2. Take an inventory of your home (all rooms) and list your difficulties in reaching things. Also include your ways of coping with these problems and the dangers involved in some of the ways.	2. Check over this inventory and list how many and which problems have been solved and tell how.
	3. Write to a furniture manufacturer and ask for information regarding how furniture can be adapted for smaller people.	

8. **Congenital Cardiac Conditions** – Planning ahead for what he needs is advisable so that he doesn't have to make several unnecessary trips. Convenient location of bedroom to other rooms in the house can help the child conserve energy.

9. **Hemophilia** – Safety precautions stressed for normal home dwellings are doubly important for these students due to the seriousness that may be involved with any accidental injury (i.e., bruises, cuts, falls, etc.).

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
CONGENITAL CARDIAC CONDITIONS		
CC-1. Planning ahead can minimize fatigue for the student.	1. Draw a floor plan of your house and map out your daily route through the house, such as in the morning, getting washed, dressed, eating, and leaving the house. Include any extra trips you usually make either upstairs, bedroom, or bathroom.	1. Math lesson – find out the actual size of the rooms in your house and the length of the hallways and stairs (if any). Then using the map from activity 1, estimate the total distance you travel daily just moving throughout your house.
	2. Looking at your map from activity one, how could you shorten the distance you travel daily? Redraw another floor plan showing how, instead of making several trips back and forth to your bedroom or bathroom you could get done what you have to in one trip.	2. Re-calculate the new distance travelled and then find the difference between the two and arrive at the amount of distance you can save traveling if you plan ahead.
	3. Discuss how planning ahead can help you save time and energy.	3. Illustrate with cartoons how you could go about saving your time and energy by planning ahead. (Show how you do something now and how you could better do it or shorten the way you do it.)
HEMOPHILIA		
H-1. Every attempt should be made to minimize the possibility of accidental injury in your home.	1. Discuss the dangerous areas in your home and describe why they present a hazard to you.	1. Make a check list to evaluate your own home for possible hazardous areas and try to have them corrected. (i.e., rubber mat in tub, carpets tacked down, wires hidden, rugs fixed with non-skid material.
	2. Collect pictures of home hazards from magazines and make posters for discussion.	2. Arrange a bulletin board with the title "BEWARE OF THESE IN YOUR HOME."
	3. Act out walking through the different rooms of your house noting the hazards you encounter.	3. Draw a series of cartoons illustrating your pretended walk. Have it printed up for distribution to the class or inclusion in the school newspaper.

9. **Hemophilia** – The hemophiliac must protect himself from bumps and bruises because of the internal bleeding they may trigger.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	4. Make a series of slides showing how accidents occur from hazards in the home.	4. Present your slides to the class as a basis for discussion on how to free the home of common hazards.
H-2. Home furnishings should be of such quality so as to prevent bodily injury to you.	1. Discuss means of making furniture safe for you. (e.g. smooth edges, padded corners, limited hard edges).	1a. Make cartoons showing how furniture can cause bodily injury. 1b. Write to furniture companies requesting suggestions as to the types of furniture you could use with little fear of injury.
	2. Cut out pictures from magazines of different types of furniture which could minimize accident risks for you.	2. Make a shoe box display of furnished rooms that are free of common furniture hazards for you.

Elementary Safety Module

School Safety

BACKGROUND INFORMATION FOR THE TEACHER

General – To avoid confusion and accidents from wheelchairs and crutches it is necessary for students to follow certain basic rules:

1 – keep to the right in corridors
2 – use caution when turning corners
3 – never push, shove, or bump others
4 – never block exits or doors.

Mirrors at corridor corners will alert children to on-coming traffic.

3. **Muscular Dystrophy** – Children who are still walking will trip or fall frequently and have difficulty getting back onto their feet.

4. **Arthrogryposis** – Ambulatory students have a stiff-legged gait and may use both braces and crutches, walking with effort, and will benefit from safety precautions in school hallways.

6. **Osteogenesis Imperfecta** – Children may be on crutches or in wheelchairs. Most often they are in wheelchairs, for it is important for them NOT to fall. They must be careful not to be bumped or jarred. There should be no rough handling of these children by others, as fractures can be caused by slight trauma. The very brittle bones of these children must be protected from injury at all times.

General – It is extremely difficult for an adult to raise or lower a wheelchair up or down stairs.

1. **Dysautonomia** – Stairs are a hazard for the child who may become dizzy or weak in school.

2. **Spina Bifida** – A great many children are in braces or use crutches. Those who ambulate would have difficulty managing stairs.

3. **Muscular Dystrophy** – It is difficult, if not impossible for a child in early stages of MD to manage stairs. Weak muscles make it a dangerous activity.

4. **Arthrogryposis** – Though some children do ambulate, it is not advisable for even those who walk without crutches to use school stairs.

5. **Congenital Amputee** – It is potentially dangerous for those walking on artificial limbs to use stairs while in school. An elevator will conserve students' energy and eliminate the danger of injury from stairs.

7. **Achondroplasia** – Shortened legs of these children make use of elevators preferable to stair climbing.

8. **Congenital Cardiac Conditions** – The student should use the elevators and conserve his energy.

9. **Hemophilia** – Whenever alternatives are possible, the student should avoid using school stairs.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Corridors and Stairs		
1. The observance of special traffic rules in school hallways will minimize the possibility of accidents for both wheelchair and ambulatory students.	1. Take a tour of school corridors and list any situations you think are unsafe.	1. Prepare safety posters to be hung in corridors at possible danger sites. (Water fountain, door openings, corners, etc.)
	2. Write a poem about the safety rules that should be observed in school corridors.	2. Set your poem to music and play it for younger students.
	3. Make a safety checklist of things to watch for in corridors.	3. Ditto off your checklist and distribute it to other classes.
	4. Make cartoons showing what could happen if students did not follow one of the basic safety rules in school halls.	4. Share your cartoons with one another, and discuss what should be done to correct each traffic situation.
2. It may be dangerous for handicapped students to use school stairs.	1. Discuss why stairs are dangerous for you.	1. Discuss what adaptations are made so that you do not have to use school stairs.
	2. Make cartoons showing what could happen to you if you went up or down school stairs. Discuss with classmates.	2. From your discussion and cartoon drawings, decide why stairs are "forbidden territory" for you. Make posters around a western theme to illustrate this.
	3. Make observations of stairwells throughout the school and of elevator locations in relation to them.	3. Draw a floor plan of the school and mark elevators you should use when coming from different areas of the building.

General – RULES FOR SAFE USE OF SCHOOL ELEVATORS:

1 – Push alarm only when necessary.

2 – Keep stop switch on "hold" when people are being loaded and unloaded.

3 – Never push or shove.

4 – Never play with elevator equipment.

Elevators can be used by disabled students if a few modifications have been planned. Basic modifications include lowering of controls to wheelchair height and making buttons easy to push by a student with weak arms or hands.

1. **Familial Dysautonomia** – A buddy system for the child will help to cut down on risks caused by dizziness or fainting spells, and he should be accompanied by someone who can get help in case of an emergency.

2. **Spina Bifida** – A child who has use of his upper extremities will make a reliable buddy for a less able classmate.

3. **Muscular Dystrophy** – Children in the early stages who are still walking will be good buddies for less abled students provided that the disability has not yet inhibited their ability to get up from a fall. If this stage has been reached then they, too, need a reliable elevator partner.

4. **Arthrogryposis** – Children may be unable to reach an emergency switch or dial an elevator phone for help. They should be accompanied by another child or an adult who can call for help in case of an emergency.

5. **Congenital Amputee** Those using a hook or artificial arm should practice manipulating buttons and emergency equipment so that elevator operation can be handled with ease.

6. **Osteogenesis Imperfecta** – Some children will be able to manipulate low controls on an elevator while others will be helpless because of casts or bone deformities from former fractures.

7. **Achondroplasia** – If equipment is lowered he will serve as a reliable buddy for a less abled classmate.

8. **Congenital Cardiac Conditions** – The able-bodied student can serve as a good buddy for a student to help in an emergency. The severity of the cardiac condition would determine the student's ability to be a buddy to a less able student.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Elevators		
1. Following certain rules and precautions will make the school elevator a safe means of transporting those students using wheelchairs or wearing braces.	1. Ask your teacher to demonstrate how to operate the elevator.	1. Practice operating the elevator under the supervision of your teacher.
	2. Make a checklist of rules to follow when riding the elevator.	2. Check your classmates to see how well they are capable of operating the elevator.
	3. Discuss what to do in case of an emergency. Demonstrate how to use the alarm system and elevator telephone.	3. Role-play what to do if the elevator gets stuck between floors.
	4. Discuss the importance of a buddy system for riding the elevator.	4. Choose a buddy and make a diagram of an elevator for the class bulletin board. Put names of buddy pairs on the board.
	5. Discuss what emergencies would possibly occur that would require you to use the alarm system.	5. Discuss the possible results of "crying wolf" when there is no real emergency on the elevator. Role-play one of your resulting situations.
	6. Make a floor plan of the school and designate areas for location of elevators.	6. Map out routes from various areas in the school (e.g. art room, nurse's office, library, etc.) showing the most convenient elevator to use from each of these areas.
	7. Observe the location of elevator operating equipment and make conclusions about it (such as why you think it was put there and whether or not you think it was a good choice).	7. Write to the elevator company requesting information on safety equipment for a school for handicapped children. After receiving information have your class make suggestions about what could be of benefit in a school such as yours.
	8. Draw a diagram of the elevator equipment panel and label each button or switch, telling what it is used for and when it should be used.	8. Hang your diagram in the school elevator for everyone to see.

General – If the small wheels of a wheelchair get caught in the space for the elevator door, the wheelchair may tip.

General – Elevator controls should be at a low level so wheelchair students can reach them with ease. Doors should be timed for longer opening and closing because children who are in wheelchairs have difficulty reaching high things and pushing their own wheelchairs.

9. Hemophilia – These children should avoid crowded elevators where jostling can occur. They should lean against the side or back of the elevator until it stops, keeping a steady balance and guarding against falls or bumps.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. There is a correct way to enter and leave an elevator.	1. Demonstrate and explain to classmates why it is dangerous to go into an elevator backwards. (The small wheels at the front can turn and catch in the space for the elevator door.)	1. Have your teacher evaluate you for your ability to enter and leave the elevator safely, following the correct procedure.
3. When riding in the school elevator it is essential to the safety of all passengers that they get on and off quietly and sit still while the elevator is in motion.	1. Ask your teacher to appoint a school police officer from your class and decide how he or she will issue tickets to those who disobey traffic regulations.	
4. Every elevator passenger should know proper operating procedures.	1. Learn how to operate the elevator. With another student observing, control the elevator, making sure students are out of the way of doors and exit in an orderly fashion.	1. Make a checklist for safe elevator use, using rules you've learned through controlling the elevator yourself. Test your classmates' knowledge.

General – Emergency situations: sudden stops; fire drill; wheelchair, crutch or walker caught in doorway.

1. **Familial Dysautonomia** – The unstable emotional nature necessitates setting guidelines for emergency situations.

3. **Muscular Dystrophy** – Children may not be able to maneuver themselves well, so they must be shown exactly what to do in an emergency situation in order to minimize time lost and energy expended.

4. **Arthrogryposis** – Stiffened arm joints may prohibit the children from reaching the appropriate emergency equipment on an elevator. Any child who cannot help himself should be paired with a more able buddy.

5. **Congenital Amputee** – Students who wear artificial arms should have enough practice in handling emergency equipment so that they can use it with ease.

9. **Hemophilia** – Will serve as a reliable buddy for a student who cannot help himself in case of an emergency.

9. **Hemophilia** – Many accidents do occur in labs, even if there is supervision. Besides those that may injure all students – there are those which seem harmless, but may be most injurious to this student. (e.g. knives, scissors, pointed objects, heavy objects, cuts from paper, etc.)

Hemophiliacs should be allowed to do any experiment, provided dangerous objects are eliminated and less harmful ones substituted.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
5. Special procedures must be followed in case of an emergency on the elevator.	1. Discuss and list common emergency situations.	
	2. Role-play common emergencies, discussing what you would do in such situations.	2a. Test other classmates by means of role playing. Give advice on how they might act in order to avoid injury. 2b. Put on a safety demonstration for other children in school on what would be done in the elevator if common emergency situations develop.
C. Laboratory		
1. The science laboratory can be used successfully when proper precautions are taken: – when doing experiments – when using equipment.	1. Take a tour through a lab and point out some of the more obvious objects that may injure you, if improperly used. – all sharp objects, – fires (burners), – chemicals, etc.	1. Write a report telling what you have learned from your tour; and some safety rules that could be put to use in the lab.
	2. Ask the instructor to demonstrate proper methods of conducting the experiment. Student should watch carefully to see if any potentially dangerous materials are used.	2. Act out the performance of an experiment, before actually doing it to prepare yourself for the actual performance, without using any dangerous materials. Then perform it using proper safety equipment.
	3. Write a list of objects viewed in a lab – on shelves, counters, or floor.	3. Use checklist to indicate YES or NO if these objects may be dangerous to you.

1. **Familial Dysautonomia** – Teachers should bear in mind that these children are emotionally immature, though capable intellectually. Structure and set routines will help to lessen crisis. Dizzy spells are not uncommon and should be anticipated.

2. **Spina Bifida** – Movement will help to keep muscles in the upper extremities firm and to curb tendency to gain weight. Sitting and being waited on by a teacher should be avoided whenever possible. Classroom materials should be accessible to those using crutches or in wheelchairs so that students work as independently as possible.

3. **Muscular Dystrophy** – As the disease progresses the children will fall more frequently and be less able to help themselves in the classroom. Any modifications to allow for continued independence will be both physically and psychologically beneficial.

4. **Arthrogryposis** – Movement will be severely limited for children who may be unable to help themselves in the classroom.

5. **Congenital Amputee** – Classroom materials and equipment should be arranged so as to give the amputee as much independence as possible while keeping accident risks to a minimum.

6. **Osteogenesis Imperfecta** – Children need carpeted floors and roomy areas free from obstacles that could cause injury to their brittle bones. (e.g. sharp or pointed objects that project out.)

7. **Achondroplasia** – Children are small, but quite capable of helping themselves if classroom materials are not out of their reach.

8. **Congenital Cardiac Conditions** – The student will fatigue easily but should help himself as much as possible. A classroom where materials are arranged for his convenient use will conserve valuable energy while permitting independence at school.

9. **Hemophilia** – Most are aware of their limitations and can handle scissors, needles, etc. if under a teacher's supervision. Care should be taken to avoid bumps or bruises, which can cause serious joint bleeding.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
D. Classrooms		
1. Sensible participation in classroom activities is essential for the safe and enjoyable learning environment of the physically disabled student.	1. Form a student government. Elect a President, Vice President, etc. for one week terms. Hold PM meetings every other day to discuss class decorum and problems in safety. When "differences" in opinions are not resolvable, form a jury, with one child as judge. Each "defendant" defends himself. Jury votes, teacher supervises.	1. Have teacher read good/bad behavior practices designed to facilitate or prevent safety in the classroom. Write YES next to the number of each statement read if appropriate, and NO if inappropriate.
	2. Discuss ways in which your classroom has been especially adapted for your safety.	2. Discuss what areas you feel need to be better adapted to insure your protection.
	3. Draw a floor plan and room layout of your classroom and mark in red all areas that are hazardous to you.	3. Draw a modified plan and show how you would change things so as to eliminate hazards.

9. **Hemophilia** – Fingertips are very susceptable to paper cuts, and these areas are prone to free bleeding.

9. **Hemophilia** – Even small scratches and punctures may cause bleeding. Other students should know how to handle all objects carefully, so as to prevent an accident to a Hemophiliac.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
HEMOPHILIA		
H-1. There is a proper way for you to handle paper.	1. Watch a demonstration of the cutting power of the edge of a sheet of paper (cut through a piece of apple).	1. Give an oral report on what you have observed.
	2. Point out different kinds of paper and tell why you think some could cause cuts, and why others probably wouldn't. Show that you should use an open hand to lift a sheet of paper and then put it down carefully.	2. Demonstrate to younger students the proper way of lifting a sheet of paper, and then putting it down carefully. Paper should not be swung around; and edges should be kept away from fingertips.
H-2. There are many objects in a classroom that look harmless, but may be dangerous to you.	1a. Use a bulletin board of flannel board to show pictures of objects that may be dangerous in a classroom. 1b. Watch a demonstration of proper use of such objects. 1c. Inform the rest of the class of the care they should use when handling a sharp object around a Hemophiliac.	1. Make and use a checklist of dangerous objects in the classroom that you should use most carefully, or not at all. – scissors – compasses – sharp edged or metal rulers – objects from science or nature classes.

9. **Hemophilia** – Any kind of a fall, bump, bruise, could cause internal bleeding (perhaps severe).

Other rewards could be: buttons that state that the student did something for *SAFETY* that day.

General – It is difficult to move a wheelchair through crowded areas. Ambulatory students may trip over any number of things including:

- people's feet
- others crutches
- misplaced chairs

General – Highly polished floors may cause walkers and children with crutches to fall. Wet floors may cause slips and falls. Flat floor surfaces are recommended.

9. **Hemophilia** – A fall could cause serious injury to the student.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
H-3. Accidents may occur in a classroom (while walking, running or playing).	1. List things in the room that may cause you to fall. e.g. – slippery floors – wet floors – crutches on floor – paper on floor – chair or desk legs – running children – children in wheelchairs wheeling backwards.	1. Give a report (perhaps into a tape recorder) and have fellow students listen to it. Report should outline the dangerous habits displayed in the class-[illegible] that should be avoided. Rewards (stars) could be given to those who see a dangerous situation and alleviate it.
E. Auditorium		
1. Special care must be taken to avoid overcrowding in school areas.	1. Draw pictures showing accidents that may occur when large numbers of people crowd into one area.	1a. List causes of accidents in a crowded auditorium. 1b. Draw cartoons of bad behavior which could cause accidents in the auditorium.
	2. Draw to scale, the auditorium and chairs. Show how many people could be accommodated safely.	2. Make up slogans for keeping down the numbers in the auditorium.
2. The auditorium floor conditions may require special precautions.	1. Invite SNT to demonstrate what could happen when walking on wet or highly polished floors.	1. Make a collage of floor pictures cut from magazines, writing in a different hazard on each picture.
	2. Fill a hat with slips of paper, each suggesting a floor obstacle you might trip on. (Do with classmates.) Each pull a slip and demonstrate possible hazards.	2. Set up a committee to rotate the job of checking the auditorium floor for safety.

General – Teacher should demonstrate what can happen if a student is a poor sport. Student should make himself aware of his temper and limitations. All children should realize that a show of temper can cause serious accidents.

1. **Familial Dysautonomia** – These children are immature in their ways and may need extra attention with regard to good sportsmanship.

2. **Spina Bifida** – Children have good usable upper extremities which are often strengthened by crutches or wheelchair use. They could easily injure another more fragile child and must learn to control themselves.

3. **Muscular Dystrophy** – Falls can produce emotional reactions of frustrations and anger in these children, who may "fight" the move to a wheelchair as the disease progresses.

4. **Arthrogryposis** – Children must be aware of their inability to break a fall with their arms should they trip during a game, and must learn to weigh the desire to win against the risk of injury.

6. **Osteogenesis Imperfecta** – All students must realize the danger of the child when he is playing in a game. Fragile bones can be broken easily, resulting in hospitalization and casts for weeks after a careless accident.

7. **Achondroplasia** – Children should be aware of the harm they can cause to their fellow students. Sports activities can be modified to allow those with smaller statues to compete fairly.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
F. Gymnasium		
1. Good sportsmanship as well as proper attire and equipment related to the unique needs of the student will help to reduce the number of accidents in the gym.	1. Ask your teacher to demonstrate gym equipment and explain the safety rules to you.	1. Have teacher check you for safe use of gym equipment during a game.
	2. Make a poster listing safety rules to follow when using gym equipment.	2. Hang your poster in the gym where equipment is stored.
	3. Discuss what type of attire you should wear when playing gym sports.	3. Cut out pictures of the kinds of clothing articles you could wear for the sports you play in school.

General – BASKETBALL SAFETY PRECAUTIONS:

1 – padded walls in gym
2 – playing in wheelchairs
3 – seatbelts locked
4 – padding on overly sensitive and exposed areas

2. Spina Bifida – Strong uppers will enable these students to participate in wheelchair basketball activities. Care should be taken to avoid and detect injury to insensitive lower extremities.

6. Osteogenesis Imperfecta – As adolescence advances and the condition stabilizes, students may finally be able to play basketball and other sports with greatly lessened chances of sustaining injury.

General – A crutch can cause harm if swung up and into someone and it can also trip other players as well as cause injury if someone falls on the crutch itself.

4. Arthrogryposis – Student should be aware that the child cannot lift his arms to shield his head from a blow nor can he move quickly to avoid injury in many instances.

5. Congenital Amputee – An artificial arm can be dangerous when swung carelessly, especially for fragile classmates.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Wheelchair basketball is a sport you can participate in with precautions taken.	1. Discuss safety rules for playing basketball and how you could participate in this sport with little fear of injury.	1. Take a field trip to observe a wheelchair basketball game and how it is played.
3. Crutches can be dangerous if not used properly in a gym activity.	1. Look at illustrations on an overhead projector showing how a crutch can be a hazard in the gym and discuss why it is so important for you to use caution when playing a game while on crutches.	1. Appoint a weekly gym monitor who will be responsible for making sure that children with crutches are extremely careful with them while playing. If he discovers a student being careless about his crutches, he can refuse to let the student play in the next gym class.
	2. Suggest other means of playing a game by which you could play without your crutches (in cases where possible, e.g. pushing a child in a wheelchair instead of using your crutches, riding in a wheelchair).	2. Play games using your suggestions and see how well they work.
	3. Make posters to be hung in the gym illustrating warnings about crutches in a gym game.	3. Display posters in the gym area.
	4. Discuss why it is important for you not to get hit by a crutch or other object especially in the legs or lower extremities.	4. Suggest means (e.g. padding) by which you could better protect yourself while playing a game in gym.

6. **Osteogenesis Imperfecta** – Some doctors forbid rough sports for the child, while others allow such activities. Children with brittle bones should be aware of the risks they take while playing in competitive games, and may find satisfaction in a less dangerous role than that of a team member.

9. **Hemophilia** – Hemorrhage may occur either spontaneously or after injury. The joints may swell and bleeding may occur in skin and muscles. (Bruises should be avoided). Bleeding episodes cause stiffness and restriction of movement. Therefore, contact sports are not recommended.

Sports should be organized which are non-contact in nature.

In lieu of the above, table games and hobbies should be encouraged.

General – For information on sports activities for the wheelchair-bound student, contact the National Wheelchair Athletic Association.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
4. You can find ways of becoming involved with school sports even though body contact may be dangerous and inadvisable for you.	1. Invite SNT to discuss the hazards of rough "body contact games" for *you*.	1. Make a bulletin board with pictures of sports or games that you should not participate in.
	2. Make a list of sports and games you could participate in with little fear of injury.	2. Discuss your list with your gym teacher and plan a gym curriculum around the sports and games you suggested.
	3. Demonstrate using cartoon illustrations, the hazards of some sports and/or games that make the sport or game especially dangerous for you.	3. For each sport or game mentioned as hazardous for you, suggest, using complete sentences, other ways in which you could be involved with the game or sport without actually playing.
	4. List different roles you could play on the school football team. (manager, etc.) Do the same for other sports.	4. Discuss all the men behind the great football, baseball, and hockey teams who are invaluable team members but never get out onto the field.
	5. Use puppets to role-play the effects on a baseball team if there were no people other than the players at a practice session.	5. Write up the things you discovered during the puppet practice session. Tell what you learned about the importance of people other than players.
	6. Make posters with magazine clippings of sports figures, putting in captions like "He'd be nothing without the men behind the scenes."	6. Display your posters in the class, along with pictures of articles about managers, owners, coaches, sponsors, etc.
	7. If you have a physical therapist available, invite him to demonstrate ways of falling which will be less injurious to you.	

2. Spina Bifida – Exercise is essential in strengthening arm and chest muscles of a student who does not have the use of his lower extremities.

If the child is able, daily walking and standing is essential in helping circulate blood, strengthening bones, and reducing urinary infection of the student.

8. Congenital Cardiac Conditions – Sports activities such as dribbling the ball and catching the ball, hitting the ball with a light bat are excellent. It is a gym activity – good for coordination but not as strenuous as relay racing, tag, etc.

Achievement Check List

1 – Can dribble the ball _____ number of times

2 – Can catch the ball

3 – Can throw the ball

4 – Can bounce pass the ball

5 – Can hit a thrown ball with a light bat.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
SPINA BIFIDA		
SB-1. Exercise should be an important part of your physical education program.	1. Invite SNT or Physical Education teacher to discuss why exercise is so important to you.	1. With the help of your Physical Education teacher, plan a routine exercise which you could do every class to develop your muscles.
	2. Invite Science teacher to discuss with you the importance of walking and standing daily.	2. Role-play various gym activities which would require walking and/or standing positions. (e.g. ping-pong, walking races, table hockey, bowling) to incorporate into your gym period.
	3. Collect pictures of various gym activities and sports; discuss which ones are hazardous to you and why.	3. After discussing hazardous or over-tiring gym activities, suggest other means by which you could be involved in these activities. (e.g. football – be score keeper or photographer).
CONGENITAL CARDIAC CONDITIONS		
CCC-1. Special adaptations in gym activities are essential in protecting you from overexertion.	1. Sportsmanship – draw cartoons illustrating good sports vs. bad sports.	1. Makeup an Achievement Checklist listing the various types of gym activities that would be beneficial for you to do.
	2. Write an essay on "What it Means to You to be a Good Sport."	2. Draw cartoons to show ways in which you could participate in gym activities too strenuous physically for you.
	3. Take slide pictures of various gym activities and discuss which ones would be hazardous for you and why, as well as which ones should be encouraged and why.	3. Plan a curriculum with your gym teacher of games and sports you could activily participate in with little fear of fatigue.

BACKGROUND INFORMATION FOR THE TEACHER

General – It is necessary for students to know about the safety features of their wheelchairs and to be able to report any malfunctions to proper personnel.

1. Seat belts must be secure
2. Brakes must be in good condition
3. Wheels should be aligned
4. Broken spokes must be repaired so they do not stick out and injure someone.

An improperly functioning wheelchair may cause the student to fall or run into things, thus hurting himself.

See Appendix – "Care of a Wheelchair"

General – SPECIAL ACCOMMODATIONS

1. walls in the gym are padded
2. elevators in place of stairs
3. carpeted areas
4. wide hallways
5. electric doors

RULES

1. stay to right at all times
2. don't run, race, push or bump into any other students
3. don't block doorways and exits
4. use caution when turning corners – make use of hall mirrors to guide you

1. **Familial Dysautonomia** – Dizzy spells may cause children to fall. Wheelchairs should be available if dizziness is severe.

2. **Spina Bifida** – Children ambulating with full braces and crutches can lose their balance and fall without the ability to brace themselves. Precautions should be taken against falls themselves as well as injury from a fall that does occur.

3. **Muscular Dystrophy** – Falls are a constant occurrence during the early stages.

4. **Arthrogryposis** – Ambulating children often have a stiff-legged gait which may be attained only with the use of crutches and braces. Falls are a danger, and should be considered when planning for these children.

5. **Congenital Amputee** – Those learning to walk on artificial legs may tend to fall frequently, so floors should be hazard-free and padded for their safety. School corridors should cause as few hazards as possible to those walking on artificial limbs.

9. **Hemophilia** – Cushioned or carpeted floors would help in the prevention of internal bleeding for the child who might fall.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
G. Wheelchairs		
1. Wheelchairs must be kept in good operating condition.	1. Read books or pamphlets from the school library on operating a wheelchair. If none are available send for information from Easter Seals Society.	1. Make your own list of wheelchair safety rules regarding the care of the wheelchair.
	2. Draw a picture of a wheelchair in good condition. Put labels in proper places for parts that should be checked regularly.	2. Display picture and write or tape record a report to go along with it.
	3. Younger students: Put words to a nursery rhyme tune about "My Wheelchair."	3. Sing song to parents or other students.
H. Special Accommodations		
1. Your school has been designed to limit accidents.	1. Discuss what areas in a school might be hazardous to a child with your disability, then what accommodations your school has made to lessen these hazards.	1. Make a survey of your school to recognize what accommodations were made that would be beneficial to you. List your findings and report back to your teacher.
	2. Draw cartoons illustrating some accidents that could occur to you in gym if the walls were not padded.	2. Make a shoebox display of school gym, showing padded walls, and demonstrate how this padding can reduce accidents to you.
	3. Discuss how elevators are necessary and what hazards are eliminated in school by having elevators.	3. Learn how to operate an elevator correctly and ask your teacher to test your ability to do so.
	4. Role-play opening and closing heavy doors and tell how they can be hazardous to you.	4. Discuss benefits of electric doors and how they can eliminate or lessen accident hazards.
	5. Make a chart showing the disadvantages of a small, narrow corridor and compare it with the advantages of a large hallway.	5. Discuss and list rules to be followed while traveling through the school corridors and then demonstrate, with role-playing the proper procedure to follow when going through the halls.

2. **Spina Bifida** – Ambulating children are prone to falling. Both ambulators and the wheelchair bound can injure insensitive lower extremities without realizing it.

3. **Muscular Dystrophy** – Children in later stages are in wheelchairs. They can easily slide or fall from a seat and must wear a wheelchair seat belt at all times.

6. **Osteogenesis Imperfecta** – Most children are able to propel themselves in their wheelchairs. They must be careful: (1) not to run into other students; (2) not to travel in an unsafe manner so as to cause others to have accidents; (3) not to bang into furniture; (4) to always have seat belt secure ; and (5) to lock brakes. Because of brittle bones the child must take care to avoid breaks (even slight bumps or twists may cause fractures).

7. **Achondroplasia** – Students are not fragile, and can easily injure less mobile classmates. They must be aware of the unsteady or fragile student around them so that their own mobility and able-bodiness will not produce hazards to others.

8. **Congenital Cardiac Conditions** – The child is usually walking and should be aware of those less steady on their feet.

9. **Hemophilia** – The child should be aware not only of the harm others can cause him, but also of the injury they could cause a classmate who walks unsteadily, or has brittle bones, etc.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. You can help to prevent school accidents, either to yourself or others.	1. Prepare a check list of rules to be observed in and around school.	1. Have other students use your checklist to see if they are being careful enough.
	2. Invite SNT and/or physical therapist to your classroom for a demonstration on proper handling of a wheelchair.	2. Write a report about what you've learned from the demonstrations and discussions about wheelchair safety.
	3. Use a bulletin board to display pictures of "do's and dont's" of wheelchair safety.	3. Using a bulletin board as a background, give an oral report to younger students and explain your display to them.

6. **Osteogenesis Imperfecta** – Due to the extreme fragility of their bones, many children may fear strangers dressing or handling them and perhaps causing injury to them.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
OSTEOGENESIS IMPERFECTA		
OI-1. The child with Osteogenesis Imperfecta can cope with his fear of fracturing a bone while being handled by learning to properly direct anyone who is helping him.	1. Discuss your problem in being handled by other people (including dangers involved, your fears, and what could be done to make you feel more safe).	1. Invite school nurse to discuss how she can be of help and assure you that if handled cautiously, you don't have to constantly fear injury. She should include which people can be entrusted to handle a child and those whom you should not let handle or dress you. Also, she should stress what precautions you should give a person who is handling or dressing you.
	2. Role-play with another student how you should be assisted putting on your coat and hat.	
	3. Illustrate on a poster board the do's and dont's one should follow when handling you.	3. Hang poster in aides' office so they can learn what they should and should not do. Explain your poster to them.

Elementary Safety Module

Outdoor Safety

1. **Familial Dysautonomia** – The poor weather conditions during the winter can cause respiratory difficulties. The eyes, too, may be a cause for extra concern, since lack of tears makes them move vulnerable and prone to injury. Hot, humid days should be avoided because breathing is difficult and excessive perspiration is dangerous.

2. **Spina Bifida** – Lower extremities must be watched for injury which may not be felt by children with sensory loss. Icy conditions are hazardous for walking with braces or crutches.

3. **Muscular Dystrophy** – Exposure to winter weather is not advisable because of the susceptibility to colds which can lead to pneumonia.

4. **Arthrogryposis** – Stiffened joints will prohibit participation in many winter sports, but modifications of games may enable the children to play.

5. **Congenital Amputee** – Modifications in outdoor sports may enable the children to participate in an active way.

6. **Osteogenesis Imperfecta** – Brittle bones will prohibit participation in many outdoor sports depending on the opinion of the doctor involved and the child's tendency to fracture.

7. **Achondroplasia** – Children will be limited only by their size, and should be able to participate in a wide variety of outdoor winter sports.

8. **Congenital Cardiac Conditions** – Very dry cold weather can cause difficulty in breathing. Therefore, outdoor activity should be avoided. Hot, humid days may also cause difficulties in breathing and may cause excessive perspiration which is dangerous to these children.

9. **Hemophilia** – The child may be forbidden to take an active part in winter sports. He should be encouraged to find alternative ways of becoming involved in them whenever possible. If any sports can be modified for him, such changes will be of great benefit to him. Any injury could result in bleeding, so extreme caution must be taken whenever he walks on ice, snow, etc.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Winter Sports		
1. Certain winter or summer sports may not be recommended for a child with your disability.	1. Collect pictures of various winter sports and discuss which ones are advisable for you to participate in.	1. Make a collage of winter sports or activities that you can participate in.
	2. Discuss sports which would not be advisable for you to participate in.	2. Cut out magazine pictures of sports which you have trouble participating in. Accompany each with a description on another way in which you could become involved in the sport without taking part in the physical action.
	3. Write a script for a puppet show about a boy or girl with your disability who dreams of becoming an olympic skier. Include why this dream is not realistic, and show how this person might channel the dream into some more possible career, like becoming a news reporter for the olympics.	3. Perform your puppet show for the class and then produce your own puppet shows on winter sports and children with your disability. (Show either how sports can be modified so you can play them, or show the other ways you could become involved in them without playing yourself.)

BACKGROUND INFORMATION FOR THE TEACHER

General – Hazards of sleigh riding – bumps, holes, sledding into roadways, falling off the sleigh, crashing into obstacles, overloading, etc.

Precautions:

1. Operate on level ground free of any obstacles.
2. Wear protective clothing (e.g. goggles, face masks, waterproof clothing, heavy padding.
3. Don't speed.
4. Secure seat belts.

1. **Familial Dysautonomia** – Because of their susceptibility to pneumonia it would probably be advisable not to participate in this activity unless they are properly dressed and protected.

2. **Spina Bifida** – If the child goes sledding and wears braces he should be careful that they don't get too cold and possibly cause a mild form of frostbite. If the child doesn't wear braces he should be careful when he falls because he may not feel an injury.

3. **Muscular Dystrophy** – These students should have someone else on the sled with them to steer for them. Also, depending on how advanced the child's Muscular Dystrophy is, he should be supported as much as possible to prevent falling.

4. **Arthrogryposis** – Their range of motion will determine the amount of assistance the child will need. If the child wears braces he should also wear high socks or long underwear to prevent the cold metal from rubbing against the skin and causing irritation.

5. **Congenital Amputee** – These children (leg amputees) must be aware of the possibility of falling or slipping while getting on or off the sled because of the snow and ice. Arm amputees must be careful steering the sled.

6. **Osteogenesis Imperfecta** – A doctor may prohibit sleigh riding for a child for fear of fractures occurring.

7. **Achondroplasia** – Because their arms and legs are shorter they probably have a tendency to sit towards the front of the sled and cause it to be top heavy and more likely to tip forward.

8. **Congenital Cardiac Conditions** – The severity of the condition will determine how much activity or shock (e.g. falling off the sled) the child could tolerate. Physician's recommendations must be followed.

9. **Hemophilia** – A doctor should be consulted before these children participate in an active sport such as sledding.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. For certain disabled people. sledding is fun, exciting and relatively safe when caution is exercised.	1. Check with your doctor to see if you can participate in sleigh riding activities. Discuss safety rules with him.	1. Take a field trip to a sledding area to observe hazards and make suggestions as to how the area could be made safer.
	2. Illustrate cartoons showing hazards to avoid when sleigh riding. Discuss these hazards and make conclusions as to what type of sleigh riding is safe for you.	2. Make safety posters illustrating what you consider to be the major rules for accident-free participation in sleigh riding activities.

General – Open fields, tall tress, wire fences, swimming pools, high exposed areas are most likely to be struck by lightning. Wheelchair bound or weak ambulatory students might be inclined to seek easy shelter under the nearest tree during a storm rather than take the time and use the energy to find a safer place to get out of the rain.

Children using metal crutches, braces, and wheelchairs should know that there is a possibility of getting hit with lightning during a thunder storm.

PUPPET:

Materials:

- fabric
- scissors
- needle and thread

Directions:

Cut two pieces. Sew around from A to B, leaving bottom free for hand. Turn right side out.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Weather Conditions		
1. Disabled people should avoid taking shelter under a tree during a thunderstorm, no matter how long it takes to get to shelter.	1. Discuss reasons for taking the time to reach safe shelter and do some library research on the consequences of using a nearby tree instead.	1. Present a report to the class on what you have learned about the proper kind of shelter to find during a storm.
	2. Prepare a puppet demonstration on what to do in various situations of storm approaching when you are outside.	2a. Put on your demonstration for the class, explaining why your puppet acts the way he does in the different situations. 2b. Test your classmates' knowledge of the proper storm shelters, suggesting situations to them and having them move the puppets in the proper ways.
C. Special Conditions		
1. Harmful substances in some plants, animals, and products may cause serious complications for the disabled student.	1. Discuss problems that itchy rashes will cause to you.	1. Role-play situations where a rash begins and the victim must cope with it.
	2. Invite a nurse or doctor to give a lecture on poisonous plants and treatment of rashes.	2. Prepare a visual demonstration of problems related to poisonous plants and their treatment.
	3. Spend a library lesson on special reference tools, using poisonous plants as an example for demonstration.	3. Write a story about a character who goes camping, on a picnic, etc., and encounters various kinds of plants. Include the practical information learned during the student activity.

Secondary Safety Modules

Secondary Safety Module

Accident Problems

General – Physically disabled students are usually capable of learning and carrying out ways of minimizing accidents.

(1) Avoid carrying fragile or dangerous objects. (ex.: sharp objects, hot soup, tea, cocoa, etc.)

(2) Walk on firm ground so falling won't be encouraged.

(3) When using a wheelchair on uneven ground or going up and down ramps, ask for assistance.

(4) Wear seat belt when in a wheelchair.

(5) Particularly in MD as it progresses, the students have to be handled more cautiously. If sitting balance is poor you must hold them up if the seat belt is taken off, or they are being toileted. These students tend to fall forward causing serious injury. Proper placement of the seat belt is important.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Minimizing Injuries		
1. A disabled person can learn how to minimize accidental injuries.	1. Draw a floor plan of your home and label all areas which are hazardous to you.	1. Draw separate diagrams of each area to show how the hazards could be corrected or eliminated.
	2. Cut out newspaper clippings of accidents occurring in the home.	2. Discuss why the accidents happened and what should have been done to prevent them.
	3. Make a bulletin board display of pictures showing the major causes of injury through accidents.	3. With each picture write a safety slogan on how to prevent the accidental injury.
	4. Make a collage of words which suggest reasons or attitudes which lead to accidental injuries.	4. Write an essay on "What I Can Do To Minimize Accidental Injury To Myself."
	5. Make a list of safety rules you could follow to minimize accidental injury to yourself.	5. For two (2) weeks' time check yourself on how well you follow your safety rules.
	6. Discuss with classmates your own experiences with accidental injuries.	6. Discuss why they happened and what could and should have been done to prevent each injury.

General – The fact that accidents kill is universal and excludes no one. Therefore, it is important for the disabled student to know not only his disability-related safety precautions, but also all safety precautions needed for daily living.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Accident Statistics		
1. Death from accidental injury is the leading cause of death for both disabled and non-disabled students.	1. Do a research paper on the statistics of people who have died through accidental injury.	1. Research the figures showing how many were disabled compared with how many were not.
	2. Cut out newspaper clippings of five accidents in which people died from injuries received.	2. Discuss what should have been done to prevent the accidents.
	3. Taking each letter from the word "ACCIDENT" write a safety slogan beginning with that letter to show how you can prevent accidents.	3. Write an essay on "How to Make Myself Accident-Proof."
	4. Discuss with classmates your personal experiences with people dying from accidental injuries.	4. Discuss why the accident happened and what should have been done to prevent it.

Secondary Safety Module

Safe Behavior

General – Students with a physical disability may be inclined to take risks to obtain peer approval or to convince themselves or others that they "can do anything you can do better." By becoming involved in researching and giving authoritative advice to other disabled students, the disabled students working on the newsletter may help themselves to take a more sensible approach to avoiding hazardous behavior.

The added stress of caring for a physically disabled child often causes adjustment problems in the family. This home stress, sometimes added to physical suffering or discomfort, may have caused a tendency to give up or neglect safety as the least of his problems. Awareness of the relation of his own attitudes to accidents may encourage him to adopt a more positive outlook.

General – Although the same gamut of personality types may be found among the disabled as among non-disabled, habits of safe behavior may not be developed by the disabled if they have been helped extensively in their activities of daily living. They may need a complete review of and repeated practice in most elementary safety habits.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Mental Health Factors in Safe Living		
1. You can make the major contribution to your own safety by positive attitudes.	1. Develop a class safety newsletter which invites letters to the editor from other students with safety problems arising from their disability. Reporters should interview an appropriate authority to help the letter-writer find a solution to his problem – e.g., the school physician, nurse, gym teacher, or physical therapist. An assistant editor may look up the laws, rules, or other information in books or newspapers. Then the editor will write an answer to help other disabled students cope with their safety problems.	1. Have an ongoing contest in each issue of the safety newsletter as an incentive to encourage students to invent more practical and less expensive appliances, improve the design of wheelchairs, etc.
2. Habits of safe behavior developed early in life can eliminate unnecessary suffering or discomfort for you.	1. Make a list of injuries or discomforts you have suffered recently. Next to each injury, write what you did or neglected to do which caused the injury.	1. Make a list of your own unsafe behaviors and number them in the order in which you feel you can replace them with safe behaviors. Work on them for two weeks and then report your success to the class.
	2. Have three students discuss how accidents have aggravated problems related to their disabilities.	2. In disability-related groups, discuss special safety behaviors which are particularly advisable for your group. Write down your conclusions and send them to your local or national organization which helps disseminate information about that disability.

General – The environment confronting a disabled person often sets up physical barriers which cause frustration and discouragement. Standards to reduce architectural barriers include:

- **ramps** in addition to or instead of steps, with graduents to rise vertically not more than one foot for each 12 feet of horizontal distance.
- **doorways** at least 32 inches wide.
- **steps** when used, to have rounded nosing with minimum overhang low risers (not more than 7 inches) and handrails (32 inches high extending 18 inches beyond the top and bottom stairs).
- **lavatory facilities** to include at least one toilet stall 3 feet wide and 5 feet long equipped with grab bars and handrails to accommodate wheelchair users.
- **entrance** on level usable by those in wheelchairs.
- **water fountains** 30 inches above the floor.
- **parking** near buildings and with sufficient space between cars.
- **telephones** within reach of wheelchairs.

(To obtain a single free copy of specifications recommended write to either:

The President's Committee on Employment of the Handicapped; Washington, D.C. or The National Society for Crippled Children and Adults; 2023 West Ogden Street; Chicago, Ill.

Public buildings in New York State must be made accessible by law.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Environmental Factors in Safe Living		
1. Hazards caused by architectural barriers can be overcome by advance planning.	1. Take slide or motion pictures of any architectural barriers you meet while on a class field trip. Also, take pictures, (having a partner take pictures of you) of the method you use to overcome the hazards.	1. Present pictures to your class, discussing how you could cope with or get around the architectural barriers you showed them. After they have suggested various ways, show them a slide or film of how you handled the situation, including how well your method worked.
	2. Plan a class field trip by yourself, based on the accommodations found for physically disabled students there, and determine what means of transportation would be needed. Keep in mind how well the destination you choose is architecturally adapted for safe mobility.	2. During the class trip take notes on any environmental hazards you and your classmates encounter. After the trip discuss with the class: a) how well adapted your destination was for them, b) what problems of mobility were met, c) how they coped with them. Then vote on whether or not it should be chosen by other classes for field trips.
	3. Draw a floor plan of your school to scale and label all architectural barriers that present a threat to your complete safety.	3. Discuss with classmates whether they encounter similar safety hazards and how they could eliminate or cope with them.
	4. Draw cartoon illustrations showing how and why particular areas of your school are hazardous to you. (Illustrate what may or does happen to you when you are there.)	4. Take slide pictures of areas in your school that have been especially adapted for your safety. For each slide taken, illustrate with your own drawings, architectural barriers they have adapted or eliminated. (e.g. stairs, elevator, doors, electric doors) by the means shown in your slides.
	5. Draw a floor plan, to scale, of your home, and mark all architectural barriers that present a safety hazard to you.	5. Discuss your hazardous areas with your classmates to see if they are threatened by the same ones and share with them any means you have discovered to cope with or eliminate the hazards.

General –

- Rain, ice, and snow pose additional problems of slippery surfaces for crutch walkers and brace wearers, requiring extra caution.
- During a lightning storm disabled people should never seek shelter under a tree or near water since they are both liable to attract lightning. Despite the difficulty of getting to shelter outdoors in a sudden storm, disabled young people need to be impressed with the information that lightning can and does strike trees, water, and tall metal structures more often.
- Freezing weather makes metal wheelchair wheels so cold that touching them is painful to children. They should be taught to wear leather gloves in cold weather.

1. **Familial Dysautonomia** – Due to lack of tears, and insensitivity to pain and heat, the students need to be aware of obstacles in their environment that are especially hazardous to them and to be knowledgeable about how to cope with them. HAZARDS: a) dust particles, b) hot objects.

2. **Spina Bifida, 3. Muscular Dystrophy, 4. Arthrogryposis, 6. Osteogenesis Imperfecta** – Students need to be aware of obstacles in their environment that are especially hazardous to wheelchairs, braces, or crutches.

5. **Congenital Amputee** – Students need to be aware of obstacles in their environment that are especially hazardous to artificial limbs.

7. **Achondroplasia** – Student needs to be aware of obstacles in their environment that are especially hazardous to people with short stature.

8. **Congenital Cardiac Conditions** – Since the students should not be overexerted, they need to be aware of obstacles in their environment that are especially hazardous to them.

9. **Hemophilia** – Due to the seriousness of their bleeding conditions, the students need to be aware of obstacles in their invironment that are especially hazardous to them.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	6. Make a model of your "dream house" showing all adaptations of architectural barriers you could make to make your home hazard-proof for you.	6. Discuss which adaptations found in your dream house can be put into effect now, realistically and practically.
	7. Draw cartoon or true-to-life illustrations of hazards you encounter when moving about in your bedroom.	7. Make a "Bedroom Safety Chart" listing rules and suggestions for eliminating the hazards you find there.
	8. Collect pictures from newspapers, magazines, or self-made drawings of architectural barriers you meet when you travel in public.	8. Demonstrate what you do or should do when you are confronted with an architectural barrier.
2. Environmental hazards may pose extraordinary dangers to children in wheelchairs, braces, crutches, with unsteady gait, etc. as well as to children who lack ability to feel hot and cold.	1. Using cartoons, illustrate six environmental hazards for you.	1. Dramatize how you cope with or eliminate the hazards you illustrated.
	2. Draw a floor plan of your home and label all areas or obstacles that pose a danger to you.	2. Make a chart listing ways of eliminating the dangers labeled.
	3. Cut out pictures from magazines or newspapers showing obstacles found in the environment which pose a threat to your safety. Arrange them in a collage on poster board.	3. Write a 3-5 sentence paragraph for each obstacle in your collage, telling how to make your environment safer by eliminating or accommodating the obstacles shown.
	4. Draw a diagram to scale of *each* room in your house in which you spend a considerable amount of your time. In each room draw in dangerous obstacles that you may find in that room.	4. For a period of two weeks make a graph to keep a record of the presence of the obstacles you find in each room (1 graph per room) and across the top of the graph print the days of the week listed in columns for 2 weeks. Put X's in each column if the obstacle was present for each day. After two weeks, make a graph to show how many obstacles were found each day of the two weeks.

Obstacles	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1 – objects on floor		X		X			X			X			X	
2 – scatter mats			X			X					X		X	
3 – floor waxed				X			X					X		X
4 – Floor wet	X												X	

# of Obstacles	S	M	T	W	T	F	S	S	M	T	W	T	F	S
4														
3														
2														
1														

Get statistics on safety of physically disabled people at work from:

The President's Committee on Employment of the Handicapped,
Washington, D.C. 20210

Reprint entitled "Disability is No Handicap for DuPont," from *The Alliance Review*, Winter 1973-74. This publication shows:

1. **Insurance** – No increase in compensation costs and no lost-time injuries.
2. **Physical Adjustments** – Minimal with most requiring no special work arrangements.
3. **Safety** – 96% rated average-or-better on and off the job with more than half above average.
4. **Special Privileges** – Disabled want to be treated as normal employees.
5. **Job Performance** – 91% rated average-or-better.
6. **Job Stability** – 93% rated average-or-better.
7. **Attendance** – 79% rated average-or-better.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	5. Cut out articles from the newspaper of accidents occurring because of environmental hazards. Tell the class how a disabled person would be affected by these hazards.	5. Discuss with classmates how and why the accidents occurred and what should have been done to prevent them.
	6. Dramatize any past experience you have had with hazards in your environment that caused an accident for you. Have classmates try to guess what you are acting out.	6. Afterwards, discuss with classmates why the accident occurred, what should have been done to prevent it, and what you did.
C. Accident Proneness 1. Accident proneness is believed to be related to personality, not physical factors.	1. Elect an officer to the student council as chairman of health and safety.	1. Have this officer report weekly on accidents that occurred in school and tell what safety measures are being enforced to prevent their reoccurrence.
	2. Research a paper for English class on the topic: "Fact or Fiction? – Handicapped Workers Have Fewer Accidents."	2. Discuss with your class the possible reasons for the evidence you found.

Secondary Safety Module

Safety in the Home

Students with physical disabilities should be encouraged to learn pre-planning and taking responsibility for their own safety.

General – Frequently used items can be hung on pegboards. Magnetized utensil holders can keep tools, scissors, etc. ready for use. Storage cabinets can be made convenient with revolving corner units and sliding drawers. Tongs can help in retrieving fallen articles and reaching items on shelves.

These students need to be doubly careful of tripping over obstacles and furniture for the following reasons:

1. **Familial Dysautonomia** – Children tend to have "weak spells and dizziness" due to erratic blood pressure and are very wobbly on their feet at times.

2. **Spina Bifida** – Children experience many home accidents due to falls because of not being able to lift feet high enough off floors; and also because of crutches being held away from bodies.

3. **Muscular Dystrophy** – Weakened leg muscles cause falls over small rugs, toys or staircases. As the MD advances, the child begins to fall for no apparent reason. In more advanced cases the students will be in wheelchairs. An adult can help a child to his feet by standing behind the child, putting his arms around the child's chest, not just under the arms.

4. **Arthrogryposis** – Since legs do not bend at the knee, they must be swung straight out for walking; there is no lifting movement at the knee. Lack of flexion magnifies dangers of throw rugs, slippery floors, or door moldings. Stiffened leg joints may cause a child to stumble over even slight floor elevations.

5. **Congenital Amputee** – The person walking on artificial limbs is more prone to falls and benefits from reduction in obvious safety hazards on floors. Children with congenital amputations may progress through various types of prostheses as their balance develops, some with feet backwards to help maintain a balanced position. A hazard-free house will help to minimize the inevitable falls that accompany learning to walk.

6. **Osteogenesis Imperfecta** – Special hazards to a child with brittle bones include: waxed floors, shower floors, tub floors, stairs poorly lit, without carpet, without railings; winter outside – icy walks without sand or salt, steps or curbs without railings, articles left out on floors.

7. **Achondroplasia** – Since he is unable to reach many objects above him, falling from stools and ladders is a constant threat to the student.

8. **Congenital Cardiac Conditions** – Removing obstacles and correcting areas which encourage falls would provide for a safer, calmer environment for the student thereby reducing some of the causes of shock reaction.

9. **Hemophilia** – A fall can trigger internal bleeding for these students.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Types of Accidents in the Home		
1. Accidents in the home can be avoided by over-all planning and a daily routine of avoiding clutter.	1. Draw a floor plan of your home and place in it all furniture and other items found in your home, and outline in red the ones that are hazardously located or interfere with your mobility.	1. Draw a model of your "dream house" in which you carefully select and place furniture for your safety and convenience.
	2. If you could change the layout of your home (location of rooms included), how would you change it to make it safer for you? (Make at least 5 adaptations.)	2. Discuss your changes and why you would make them. Then decide ways of adapting or coping with your home setup as is, since you probably cannot change the layout.
	3. Draw a floor plan of your house, including all steps, stairs, and narrow doorways, and mark with an *X*, your bedroom. Then map out in green the route you must follow to get to the 1) kitchen, 2) bathroom, 3) living room or den, 4) front and back doors, from your bedroom. Label in red circles, all hazardous areas or obstacles you encounter on each of your routes.	3. Discuss each of your red circled areas as to a) why they are hazardous to you, b) what you have done to adapt or cope with them, c) what you could do to cope with or adapt to them.
	4. List 5 reasons why you feel your bedroom is safely, conveniently located in your house.	4. If you feel its location was not well planned for your safety and convenience, suggest other rooms in your home which you feel would be better and tell why. Share your ideas with your family.
	5. Write an essay on the importance of planning in our lives. Include household planning, daily routine planning, activity and future planning.	5. Draw illustrations to show why household planning is essential to your safety and well being. (What household planning can do for you.)

Handbook for the Home, published by the U.S. Department of Agriculture, 1973, and now available from the Superintendent of Documents; U.S. Government Printing Office; Washington, D.C. 20402 for $5.70, has 85 sections written by different authorities and contains helpful information for the home. Especially important is a chapter "Barrier-Free Housing for the Handicapped" written by Lois Schwab of the University of Nebraska – Lincoln. This chapter has extensive checklists for the overall planning of a house for the physically disabled.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	6. Cut out pictures from magazines or newspapers, or draw items found in your home which are constantly causing you to fall.	6. For each picture, write a complete sentence either to warn others about these obstacles or to tell of a way of correcting these hazards.
	7. Write a short play to demonstrate the need of and importance of avoiding clutter in our homes.	7. Assign parts of your play to your classmates to perform in other classes.
	8. Cut out newspaper articles on accidents that occur in the home.	8. Discuss why these accidents occurred and tell how they could have been prevented by planning and tidiness.
	9. Take each letter from the word ORGANIZED and write a complete sentence beginning with each letter on the importance and need for organization to minimize accidents.	9. Make a model of your bedroom and show all items present in it. Show how you could better organize things so as to make your room an "accident-free" environment for you.
	10. Take a count of all obstacles in your room tonight.	10. For two weeks' time make a graph showing the number of obstacles in your room and compare last night's count with your 14th day result. Better or worse?
	11. Draw cartoon illustrations showing "do's" and "dont's" in your home to avoid clutter, and help make it accident-free.	11. Write a poem on what it meant to you to make your home accident-free.

BACKGROUND INFORMATION FOR THE TEACHER

General – Disabled children and elderly adults have similar safety problems because of difficulties in moving around, or because of weakness or limited endurance. It is therefore very important for disabled children to realize their susceptibility to accidents and to take the precautions which can eliminate the special dangers.

Suggested home alterations to make home safer:

- elimination of loose carpets
- relocation of light switches and electrical outlets
- elimination of door sills
- widened doorways
- windows not higher than 36" from the floor
- crank-operated windows
- handrails and grab-bars

Check out the commercial names for flammable cleaning liquids. Examine labels for chemical contents.

Children who spend extended time at home are particularly endangered by materials which are nauseating, irritating, or poisonous.

For getting out in an emergency, precautions must have been taken ahead of time. Some suggestions are:

- Exits at ground level
- Doorways wide enough for a wheelchair
- Alert stickers for firemen on front and back doors
- Ramps at exits
- Ramps at proper inclination
- Strong railing on ramp
- Exit routes kept clear at all times

In a questionnaire given to Human Resources School students with Muscular Dystrophy, the following concerns were expressed for their own safety:

a) I live upstairs
b) I can't get out of the house by myself
c) I can't dial a phone
d) I can only communicate with people out of the room by screaming
e) I can't get out of my room by myself
f) I may be left somewhere
g) No telephone in my room
h) I may lose my balance
i) No stickers on my house saying I'm handicapped in case of fire
j) It takes long to get out of my room – narrow hallway
k) Steps going out of house
l) Can't pick up phone alone
m) Some doorways are narrow
n) Can't push myself in wheelchair
o) Cannot move myself to a window or a door to call for help
p) If ever left alone in the house, I cannot help myself

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Those Most Susceptible to Danger		
1. Special precautions are needed for the homebound or bedridden.	1. Draw cartoons to illustrate five ways for a bedridden person to summon help.	1. Write to the telephone company and ask for information about telephone devices for very weak or disabled people.
	2. List the advantages of an intercom system and of closed circuit television.	2. List equipment (such as an oxygen tank or suctioning apparatus) which could be important for you to have handy at home. Check to see that you have it in working order.
	3. Write a composition on "My Accident-Proof Home." Include how to make your home accident-proof.	3. Write a list of special safety precautions, ten for each, to protect (1) disabled children and (2) the elderly from injury in the home.
	4. Draw cartoon illustrations to show ten ways by which an elderly person could be injured in the home.	4. For each letter in the word ACCIDENT write a safety slogan (beginning with each letter) for an elderly person to follow to prevent accidents in the home.
	5. Study the characteristics of irritating chemicals found around the home such as ammonia and chlorine.	5. In science class study household organic materials which are flammable: oily rags, gasoline, and benzene.
	6. Compare materials: metals, plastics, wood, for friction, surface tension, and slipperiness.	6. Investigate which materials are light, sturdy and practical for wheelchairs, crutches and braces.

General – Each student should be aware of what his government and his community can and does do to help make his neighborhood a safer place to live, and how one goes about getting assistance.

Students may need more time to get around and should plan to use time wisely and avoid having to rush for the following reasons:

1. **Familial Dysautonomia** – Because of fluctuating blood pressure.

2. **Spina Bifida** – Because of crutches, braces, and/or wheelchairs.

3. **Muscular Dystrophy** – Because of slow and unstable ambulation and/or wheelchairs.

4. **Arthrogryposis** – Because of crutches, braces, and/or wheelchairs.

5. **Congenital Amputees** – Because of artificial limbs, crutches, braces, and/or wheelchairs.

6. **Osteogenesis Imperfecta** – Because of crutches, braces, and/or wheelchairs.

8. **Congenital Cardiac Conditions** – Since it is not good for cardiacs to become overexerted.

9. **Hemophilia** – Because of the need for extreme caution in preventing injuries which could cause bleeding.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
C. Preventive Measures		
1. The disabled student, the community, and the legislature all have a stake in developing preventive measures against home accidents.	1. Do a research paper on how a bill or law is passed in our legislature.	1. Discuss various reasons why this procedure is important and could be of benefit to you in regard to reducing home accidents.
	2. Cut out newspaper clippings on legislative and community action to prevent home accidents.	2. Discuss clippings and why the action taken was necessary, and why it was or was not successful.
	3. Discuss with class any personal experiences you may have had of community members acting together to eliminate a safety hazard.	3. Discuss how your community went about correcting the situations and the success of their actions.
2. Accidents may be minimized by a weekly and a daily plan of action which could help you to avoid hurrying.	1. Keep a diary of everything you do for one week, record how long each activity took you and include traveling time used to get from one place or room to another.	1. Looking back on your diary, total the amount of time you feel you used wisely, the amount used unwisely, and the amount that could have been better used. Compare the figures to see which is greater. If your wasted time is substantial, discuss why, and then make suggestions as to how you can better use your time.
	2. Illustrate with cartoons any and all times during the day when you find yourself hurrying to get about.	2. For each illustration write a slogan to suggest how you could eliminate the rushing.
	3. Write an essay on the hazards of rushing.	3. Make a collage of words to show why people should not hurry about so much.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	4. Cut out newspaper clippings of accidents which were caused by someone's haste in acting too quickly.	4. Discuss how the accidents could have been avoided.
	5. Write a chart of Do's and Dont's which should help you avoid hurrying while getting ready for school.	5. Check yourself on your observance of the suggestions on your chart for one week and then discuss which ones helped you and which ones didn't really make a difference.
	6. Take each letter from the word HURRYING and write a safety slogan on why hurrying is especially hazardous to you.	6. Dramatize a scene for each slogan you made to demonstrate the hazards involved.
	7. When watching TV, especially comedy shows, take notes on any mishaps that occur due to a character's haste.	7. Discuss what the characters in each case could have done to prevent any mishaps.
	8. Write a poem on the need for planning in our lives to prevent accidents.	8. Write a short story on a day in the life of "Freddie, the Dreamer," who never planned for anything and only spent his time day dreaming, thus causing him many mishaps when he had to rush around at the last minute to get things done.
	9. Draw a floor plan of your home and mark out in different colors, all the routes you cover daily when moving about your home.	9. Decide which routes are unnecessary or could be eliminated in your daily routine and tell how.
	10. Plan a weekly routine for yourself in which you use your time wisely and don't need to rush about unnecessarily.	10. After one week, discuss how well your plan worked: (a) Were there any loopholes in which you found yourself rushing about despite your planning? If you did, what would you do to eliminate the rushing? (b) If your plan was successful, did you find you had more time to enjoy and relax?

Secondary Safety Module

Safety in the School

BACKGROUND INFORMATION FOR THE TEACHER

Physically disabled students have a special stake in helping to keep the classroom free of clutter since they may fall more easily and with more serious consequences. Clutter is hazardous to different students for different reasons:

1. **Familial Dysautonomia** – Inability to feel pain, attacks of dizziness, and unsteady walk are reasons why special care should be taken to keep the classroom environment free from clutter.

2. **Spina Bifida** – Because of crutches, braces, and/or wheelchairs, these students need to protect themselves from the hazards of clutter carelessly lying about on the classroom floors.

3. **Muscular Dystrophy** – Because of their waddling gait and lordosis, ambulators are prone to falling. Others are already in wheelchairs. Special care must be taken to keep the classroom free from clutter to prevent accidents.

4. **Arthrogryposis** – Crutches, braces, and/or wheelchairs, and inflexible limbs would make it difficult to keep one's balance if one should trip over even a small object on the floor.

5. **Congenital Amputee** – Artificial limbs, or crutches may slip on a stone or a piece of paper.

6. **Osteogenesis Imperfecta** – Brittle bones could be fractured from tripping, or from having something fall on them.

7. **Achondroplasia** – Short legs cannot easily step over objects which would not pose an obstacle to a taller person.

8. **Congenital Cardiac Condition** – These students need to avoid unnecessary anxiety or upsetment (e.g. from a fall) and therefore to prevent shock reaction, special care should be taken to eliminate the hazards of clutter on classroom floors.

9. **Hemophilia** – The student needs special measures of safety to protect himself from falls, bruises, bumps, cuts, and scratches because of the bleeding which would result.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Types of Activities		
1. Keeping the classroom free from clutter can reduce accidents that may be harmful to you.	1. Take a survey of all your classes noting the things cluttering them.	1. Illustrate drawings to show why these obstacles are especially hazardous to your safety.
	2. In a discussion with your classmates, think up ways to eliminate the problem of hazardous clutter in the classrooms.	2. Make up several poster boards of slogans you made up to help get your teachers and classmates to participate in a "no clutter" campaign in your school.
	3. Write a list of safety rules for you to follow to protect yourself from injury in a classroom.	3. Draw a floor plan of all the classes that you attend daily in school and label all hazardous areas for you. Give suggestions as to how to eliminate or cope with these hazards.

Disabled students should be taught basic rules of consideration for others like keeping to the right, taking turns, avoiding bumping each other and letting the previous class leave a room before trying to enter. While these rules are standard for everyone, they become a matter of self-preservation for the disabled students, who should follow special safety procedures for the following reasons:

1. **Familial Dysautonomia** – Since many students do not feel pain they must refrain from putting fingertips in door jams or drawers, and should avoid bumps on the legs from wheelchairs.

2. **Spina Bifida** – Since legs have no feeling, those on crutches need to be cautious about bumping their legs against desks, wastebaskets, chairs, or other's wheelchairs.

3. **Muscular Dystrophy** – Students who are still walking often fall suddenly and should either hold on to desks or walk where aisles are wide enough to avoid hitting sharp corners. Those in wheelchairs should avoid collisions because their precarious sitting balance would not hold them in their chairs. Seatbelts must always be securely fastened.

4. **Arthrogryposis** – Because of inflexible joints, these students may remain standing and need a securely fastened table to write on. If they wish to be seated, someone should hold their chair steady and help them while they take a seat or while they are rising.

5. **Congenital Amputee** – Students with prosthetic legs should be alert to avoid getting knocked over by another student or a wheelchair.

6. **Osteogenesis Imperfecta** – The necessity for avoiding additional fractures should induce these students to proceed cautiously, avoid bumping into others, and to speak up if they see someone else about to bump into them.

7. **Achondroplasia** – Students who are below the eye level of the crowd have to exercise special caution to avoid getting stepped on or kicked.

8. **Congenital Cardiac Conditions** – In order to avoid stress or fatigue, these students should carry only the book they need, or have an extra set so that one can be left there. They should also conserve energy and avoid rushing through preplanning their tasks and allowing enough time to complete them.

9. **Hemophilia** – Since these students often do not look disabled, they have to avoid other students who are "clowning around" or hitting each other. They also should exercise special caution in passing sharp furniture, since blows or scrapes could cause a bleeding incident.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
2. Following certain safety procedures when moving about in the classroom can eliminate accidents.	1. Discuss any past experiences you may have had with injuries inflicted upon you from either wheelchairs or crutches used by your classmates.	1. Make suggestions as to how you could better protect yourself from these injuries.
	2. Role-play what type of procedures you should follow when entering or exiting from a classroom.	2. Illustrate with cartoons the do's and dont's you should follow when moving about the classroom.
	3. Write an essay on "Safety Procedures for Me to Observe in the Classroom." Include observations about what type of furniture arrangement is beneficial for your protection.	3. Make a collage of words to demonstrate the caution you must use at all times when circulating about in a classroom.
	4. Draw up a list of safety procedures for you to follow in class.	4. Discuss your need for the safety precautions and the type of accidents they can eliminate.

General –

ENVIRONMENTAL ADAPTATIONS:

a) ramps

b) elevators

c) electric doors

d) carpeted floors

e) furniture arranged so that it is not in the way of one moving about on crutches or in a wheelchair or ambulating

f) no aisles of desks and chairs to allow more freedom of movement

g) table heights adjustable so wheelchairs can fit under them and children with braces and crutches can stand or sit comfortably

h) chalkboards installed at heights accessible to wheelchair students

i) padded seats

j) no rough or pointed edges or surfaces

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
3. Certain physical environmental adaptations can make the classroom a safer place for you to be.	1. Draw a floor plan of your classroom(s) and place in it the various articles found therein. Label in RED all articles or structures which pose a threat to your safety.	1. Discuss how you cope with the hazards you labeled and how they could be changed or adapted to make them safer.
	2. Write a letter to a school furnishing company requesting information on new styles of classroom furnishings.	2. Decide which of these would be safe and practical for you.
	3. Draw a model of an ideal classroom which you design because of its accessibility and ease of mobility.	3. Discuss your reasons for the way you designed your classroom.

General – Science labs have, for the most part, been closed to the physically disabled student. But Human Resources School in Albertson, New York, has opened up these doors by making certain adaptations to allow for accessibility by the physically handicapped. This laboratory has done away with the difficulties and dangers encountered by physically disabled students which resulted from work stands that are too high, aisles that are too narrow to accommodate a wheelchair, equipment placed out of the students' reach and often a general crowding together of work areas. The sinks, gas, and water controls are within easy reach of the students and accessible to those in wheelchairs. Batwing faucets and gooseneck spigots are two features that are helpful for those with upper extremity orthopedic involvement. The batwing faucets require minimal manual dexterity for manipulation, while the gooseneck spigot allows for greater ease of operation by providing ample room between the sink and the spigot.

For demonstrations, an overhead pivot-mirror installed in a vertical position above the demonstration table allows the students to view the demonstration performed at the teacher's table from their seats, without having to move around the room and without crowding about the table. In addition, the use of a video-tape closed circuit television set up with large screen monitors would allow for easy viewing by the students throughout the room.

As another alternative, a portable demonstration table is included in the laboratory so that crowding around demonstrations at the teacher's table for a better view is eliminated by bringing the demonstration to the students rather than vice-versa. Also, working with partners helps science lab learning, each student being responsible for as much of the experiment as he is capable of performing.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
4. With special adaptations you can safely participate in a science laboratory class in school.	1. Draw a floor plan of a "normal" school science lab classroom, that you have visited or have seen pictures of.	1. Draw a floor plan of your school's science lab. How do they differ and how are they the same? What accommodations has your school made that are especially advantageous for you?
	2. Draw illustrations of work areas or procedures that represent a hazard or difficulty for you in the science lab.	2. Discuss how you cope with these problems and suggest ways of eliminating or correcting them.
	3. Write an essay on "What it Means to Me to Be Able to Participate in Science Lab." Include how this is possible for you.	3. Write a list of safety rules or slogans that you should follow when in the science lab.
	4. Illustrate with cartoons what accidents could occur in the science lab due to carelessness.	4. Discuss how they should be prevented and tell what type of student behavior is essential to safety in the science lab.
	5. Discuss why a buddy system would be beneficial to your safety in science lab.	5. If you didn't have a partner, in what ways would you handle something hot or dangerous in the science lab?

General – Students should be taught safe procedures in using materials such as:

1. scissors
2. needles
3. pins
4. knives
5. pointed objects
6. paper cutters

General – A theater-in-the-round performance can be staged in a large room such as a gymnasium. It enables disabled students to perform without the hazards of getting up to the stage, getting off and on from backstage, etc. Good overhead spotlights and a few adaptable props are all that is needed. The proximity of the audience seated in a circle around the performers compensates for some students who have weaker voice projection. Since theater is a world of make-believe it is easy for actors and audience to ignore wheelchairs or crutches and, concentrating on the story, enact any play as if the wheelchairs and crutches were not there.

General – Special precautions and adaptations may be necessary for the disabled student, according to his disability, so that he may safely and more fully participate in school curriculum.

GENERAL RULES TO FOLLOW IN GYM:

a) don't run, race, push, or bump into any other student.
b) don't swing crutches around or cause others to trip over them
c) don't leave equipment carelessly lying about
d) be a good sport
e) make sure equipment and wheelchair are functioning properly before you begin

GUIDELINES

BASEBALL –

Runner called out when just near the player or base.

Use of plastic bats and balls.

Ambulatory student[illegible]rmitted to run.

Substitutes: wheelchair for wheelchair and ambulatory for ambulatory.

Use of runners for MD students who can't push.

BASKETBALL –

LIMIT AMOUNT OF CONTACT – penalty rules against.

Any wheelchair contact is a foul.

Use of seatbelts.

FOOTBALL –

Use of smaller, softer ball – avoid trauma for children with Osteogenesis Imperfecta and Hemophilia.

No blocking or tackling.

Play ends when person with ball is tagged.

Use of seatbelts.

NEWCOMB –

Use a spongy type ball – ball will not hurt child.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
5. Special precautions are needed when working with various materials in the classroom.	1. Cut out pictures of or hand draw pictures of materials you use in the classroom which require special caution when you use them.	1. Role play how to properly use a scissor, a needle, and a knife, and how to safely pass these objects from one classmate to another.
	2. Write a list of safety rules for you to follow when working with scissors, needles, or other sharp pointed equipment.	2. Discuss any past experiences you have had with injuries from school supplies. (Include how it happened and what could have been done to prevent it.)
6. You can successfully participate in dramatics by using your ingenuity.	1. With the help of your English teacher, choose a one-act play for performance with a theater-in-the-round arrangement. Work out such adaptations as: (1) which directions each actor should face, (2) how many times a minute he should move, and (3) how he should enter and leave the circle.	1. Invite another class or your parents to your performance.
7. You can safely participate in gym activities by following certain guidelines.	1. Make a shoe box display of a gym activity of your choice with players inserted in bottom of box so that they can be moved about for the game positions.	1. Using your shoe box display, demonstrate the dangers involved in the game you chose and what aspects are particularly hazardous to you. Discuss what you can do to minimize the hazards.
	2. Make a poster chart of rules that should be obeyed by students when in the gym.	2. Post your chart in the gym for others to read.

GUIDELINES

HOCKEY –

Use of soft spongy type ball.

Boundary line between teams wider to prevent person from being hit with any force.

ARCHERY –

Target is isolated.

All participants behind shooter.

Match disabilities.

Regulation equipment used.

GOLF – MINIATURE –

Course widened for wheelchairs (approximately three feet).

Non-abrasive surface – in event that child falls.

Ball retrievers at end of club to allow child in wheelchair to pick up ball without having to bend.

Angle of golf club geared to person sitting; lighter weight.

PING-PONG –

Regulation size equipment.

BOWLING –

Use of special ramp to direct and project the ball toward the pins.

Use of special ball with handle (that retracts) for wheelchair players.

VOLLEYBALL –

Balloon-type ball – keeps ball in the air longer and is safer; give children more ability.

RELAY RACES –

Matched according to disability.

Ambulatory students must walk.

SOCCER – English handball –

Ball passed rather than kicked.

Goalie net longer and wider to prevent contact with goalie.

Use of softer ball – less trauma.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	3. View pictures of various sports played in gym (either slides, movies, or magazine pictures) and discuss which ones would be hazardous for you as well as which ones would be safe. Tell why.	3. Write a composition on either ways of participating in a sport of your choice that is too rough or difficult for you to play.
	4. Cut out pictures from magazines, newspapers, or your own drawings, of sports you participate in while in gym.	4. For each sport draw or cut out pictures of equipment and/or safety measures you use or should use for protection when playing.
	5. Play-act what hazards or accidents wheelchairs can cause during a gym activity. Make a list of rules to be observed when playing in a gym sport or game.	5. Be appointed gym policeman for a week. Check on your classmates' observance of safety rules, issuing tickets to those who do not abide by them.
	6. Take slide pictures of your class during a gym activity.	6. Show slides to class and discuss any hazardous behavior or motions found and tell how to correct them.
	7. Using the letters from the word GYMNASIUM write a safety rule beginning with each letter to follow in the gym.	7. With guidance from the gym teacher, set up a curriculum of gym sports you can safely participate in.
	8. Illustrate six cartoon drawings showing the hazards of using crutches in a gym sport.	8. For each cartoon, write a cautioning slogan of do's and dont's to follow when using crutches in a game.

BACKGROUND INFORMATION FOR THE TEACHER

General – Since disabled children are usually not allowed in the kitchen the skills taught in home economics are doubly important and useful to them. If the disabled student is taught to follow safety rules and to make use of the many devices available for helping to establish independence in the kitchen, he can learn to cook for himself.

DEVICES:

a) rocker knife enables person to cut food with one hand.

b) food-guard on plate keeps food from falling off the plate.

c) right-angled ledge holds bread slice in place while you butter it.

d) rubber suction cups steady dish, hold cutting board in place.

e) spatter lids and oversized (barbecue) utensils can avoid spattering grease or steam.

f) strainer lid can be placed on cooking pots for safe drainage of hot liquids.

g) grippers for picking up hot pans and increasing reach.

h) holders for steadying mixing bowl made by cutting a hole in a board that fits over an open drawer.

SAFETY RULES:

a) handles of pots turned away from front of stove.

b) use electrical equipment properly – dry hands.

c) wipe spills immediately.

d) don't use broken or chipped glasses or china.

e) if glass breaks, put large pieces in a bag and use a paper towel to wipe up glass splinters.

f) use only necessary tools and equipment so as to avoid clutter.

g) light gas stove carefully according to the directions.

h) chop or mince food on a board.

i) be careful of escaping steam when removing the lids from pots.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
8. You can safely participate in the activities of home economics classes and learn the essentials of homemaking.	1. Visit the Home Ec room and ask the teacher to discuss and point out all areas of the kitchen which pose some hazard or difficulty to you.	1. From this visit draw up a chart with pictures to illustrate the do's and dont's to practice when working in the kitchen.
	2. Take slide pictures of your classmates acting out proper routines and procedures to follow in the kitchen.	2. Organize the slides into a series entitled "Safety in the Kitchen" and invite other classes to view and discuss them.
	3. Write an essay on "The How's and Why's of Safety in the Kitchen."	3. Make copies of your essay for classmates to read and discuss.
	4. Draw a model to scale of your home kitchen. Include all appliances, their height, and location of switches and handles. Label by outlining in RED all areas and/or appliances found in the kitchen which present a hazard or difficulty to you. For each selection write 3-5 sentences on why each is a hazard to your safety.	4. Make a model, using a cardboard box and making copies of all objects found there, of your "dream" kitchen. Mark all heights of cabinets, closets, counters, sinks, appliances and widths of all doorways and work areas that you would need for ease of mobility as well as to prevent overreaching. Label all appliances you would need to make the activities of daily living easier for you. Then write a 3-5 sentence paragraph on why these adaptations shown in your model are necessary and important to your safety in the kitchen.
	5. Write a letter to an electrical appliance company of your choice, telling them of your disability and requesting information on adaptations that can be made in your kitchen to make work there safer and easier for you.	5. After receiving requested information discuss with the Home Ec teacher which suggestions you think would be beneficial and practical for your use.

BACKGROUND INFORMATION FOR THE TEACHER

1. **Familial Dysautonomia** – The student needs to be doubly cautious in preventing injury to himself due to diminished sensitivity to pain.

2. **Spina Bifida** – The student needs to be doubly cautious in preventing injury to himself due to lack of sensitivity in lower extremities, in addition to crutch or wheelchair dependency, which makes mobility difficult.

3. **Muscular Dystrophy** – The student needs to be doubly cautious in preventing injury to himself due to wheelchair dependency, which makes mobility difficult in later stages, as well as unstable walk in earlier stages, which makes falls a constant problem.

4. **Arthrogryposis** – The student needs to be doubly cautious in preventing injury to himself due to braces, limited arm movement, lack of finger movement, and crutches or wheelchair dependency, which makes mobility difficult.

5. **Congenital Amputee** – The student needs to be doubly cautious in preventing injury to himself due to artificial limbs in addition to crutches or wheelchair dependency which makes mobility difficult.

6. **Osteogenesis Imperfecta** – The student needs to be doubly cautious in preventing injury to himself due to brittle bones, in addition to crutch, or wheelchair dependency which makes mobility difficult.

7. **Achondroplasia** – The student needs to be doubly cautious in preventing accidents to himself due to his small stature.

8. **Congenital Cardiac Conditions** – The student needs to be doubly cautious in preventing injury to himself due to lower level of shock resistance.

9. **Hemophilia** – The student needs to be doubly cautious in preventing injury to himself due to seriousness of his bleeding condition.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	6. Cut out magazine and newspaper articles about accidents that happen in the kitchen.	6. Discuss with classmates (a) why these accidents occurred, (b) what should have been done to prevent them and: What action should have been followed after they occurred.
	7. Invite SNT to discuss what types of first aid you should know when working in the kitchen.	7. With guidance from the SNT make your own first aid kit that you can keep and utilize in your kitchen.
	8. Write an instructional essay on safety rules to follow when working in the kitchen, teaching others what they need to know about safety when working in the kitchen.	8. Read your essay and demonstrate your safety rules to your class.

General – Proper clothing is important to the children. Their clothes should be of the easy-on, easy-off type to conserve energy while dressing and to provide comfort and freedom of movement. For brochures and size and price lists of clothing for the physically handicapped, write to:

Fashion – Able
Rockly Hill
New Jersey 08553

or

Vocational Guidance and Rehabilitation Services
2239 East 55th Street
Cleveland, Ohio 44103

FEATURES TO LOOK FOR:

1. Length is not so long that it gets in the way of crutches or wheels of a wheelchair.
2. Goes on and comes off easily so that you can dress yourself easily and more independently.
3. Openings are where you can reach them.
4. Have extra long plackets, zippers or velcro (pressure type closing that sticks to itself) type of pants legs and sleeves to make dressing easier if you wear braces.
5. Gives freedom of movement when dressing (e.g. full-length openings and wrapped style skirts and dresses).
6. Look for clothing which eliminates reaching over the head, e.g. wrap-around skirts and dresses. (For cardiac and those with limited arm mobility)
7. Hoop apron eliminates the need for tying apron strings.

1. **Familial Dysautonomia** – His clothing should be appropriate when it is hot or cold so as not to intensify his fluctuating temperature condition.

2. **Spina Bifida** – His clothing is important if he uses crutches so that it does not get in the way of his crutches. (wide pants, long skirts and dresses, or pants cuffs)

3. **Muscular Dystrophy** – Proper clothing is important to the child who wears braces and uses a wheelchair so that his clothing does not get in the way.

4. **Arthrogryposis** – Proper clothing is important to the child who uses crutches so that his clothing does not get in the way of his crutches.

5. **Congenital Amputee** – Proper clothing is important to the child who uses crutches and/or artificial limbs so that it does not get in the way of the crutches or artificial limbs.

6. **Osteogenesis Imperfecta** – Proper clothing is important to the child who ambulates so it doesn't get in the way, causing him to trip and fall.

7. **Achondroplasia** – Proper clothing is important to the child whose small stature requires shorter clothing so that he does not trip and fall.

8. **Congenital Cardiac Conditions** – Proper clothing is important to the child so as to eliminate unnecessary stretching of the arms over the head, fatigue or frustration.

9. **Hemophilia** – Proper clothing is important to the chil and should not be so long as to cause falls or so tight as to stop circulation.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Preventive Measures 1. In home economics class, disabled students can learn how proper clothing can minimize accidents.	1. Discuss with Home Ec teacher which types of clothing would be hazardous or cause difficulty for you.	1. Dramatize a past experience with different types of clothing which gave you difficulty.
	2. Write a letter to a dressmaking company of your choice, requesting information on various styles of clothing beneficial for the handicapped person.	2. Discuss suggestions of clothing styles you received. Tell which ones you like and tell why they would be practical for your use.
	3. Cut out pictures from magazines or newspapers of styles of clothing apparel that would be fashionable, yet accommodating, for you to wear.	3. Design your own wardrobe for one week. Include any special features in your clothes that would make them more comfortable and accessible for you.
	4. In Home Ec make an outfit of clothing for yourself, designed with complete comfort and convenient features for your wearing.	4. In a fashion show, model your outfit and discuss why you made it, the way you did it, and how it accommodates itself to your needs.
	5. Discuss with your classmates the various types of clothing they wear. Take a tally to see how many dress the way they do simply because of style or if it is because what they wear is comfortable and convenient for them.	5. Ask each member of your class to model (or sit in front of the class) his/her clothes and lead a discussion for each student, on whether or not he/she is dressed appropriately and sensibly for his/her disability, then tell why or why not.
	6. Collect pictures of clothing from magazines and newspapers and arrange them on a bulletin board labeled "EXCELLENT, GOOD, FAIR, or POOR" according to how well they accommodate to your needs for safety and convenience.	6. Next to your bulletin board display make a chart listing the features you should look for when you purchase your clothes.

BACKGROUND INFORMATION FOR THE TEACHER

General – The student should be aware of what is being done by the government to make our schools more safe as well as how to go about getting government aid.

The disabled student needs heightened awareness of his own responsibility to cooperate with local and state lawmakers in promoting safety standards for schools.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	7. Collect pictures or draw your own, of the various types of openings and fasteners found in clothing today. Label the ones that are beneficial to you.	7. Illustrate using cartoon sketches why various types of openings and fasteners for clothing are or are not convenient for your use.
2. The disabled student, the community, and the legislature can cooperate to make school safe.	1. Do a research paper on how a bill or law is passed in our state legislature.	1. Discuss various reasons why this procedure is of importance and could benefit you.
	2. Investigate your school for any new safety features it has adopted in the past five years. List them.	2. Investigate why the safety measures were adopted and how your school officials went about getting them.
	3. Take a survey of your school and note any areas that you feel are hazardous to your safety and the safety of your classmates. In a discussion with your classmates, decide upon ways to make the areas more safe or accident proof.	3. Write a letter to your state legislators telling of your findings and requesting that something be done to correct the problem areas.
	4. Collect newspaper clippings on the community's and legislature's efforts to make various schools in your state safer.	4. Discuss clippings with your class and arrange them on a bulletin board entitled: "LOOK WHAT YOUR GOVERNMENT CAN DO FOR YOU!"

Secondary Safety Module

Safety in Physical and Recreational Activities

General – Team or individual recreational activities are often the best way to motivate physically disabled students to use their physical abilities to full capacity and to overcome their reluctance to move around.

In gym they need a thorough orientation to the play areas and the use of the equipment. They will profit by a series of lead-up activities designed to give them an awareness of the nature of balls of various textures, sizes, and weights, an ability to anticipate the movements of balls or moving objects, and practice in navigating on crutches or in a wheelchair.

Special equipment is necessary for physically disabled students when playing certain sports or games. The type of equipment depends on the extent of the disability.

RECREATIONAL ACTIVITIES WHICH CAN BE SAFELY ENJOYED:

1. **Familial Dysautonomia** – Lawn bowling, croquet, miniature golf, ping-pong, shuffleboard, walking, swimming – with great care, billiards and pool using a cue rest, and exercises for developing postural drainage.

2. **Spina Bifida** – Tether line game, archery, volleyball – using a beach ball, endball with a tetherball attached to a horizontal line, basketball shooting, wheelchair soccer – moving the ball by bumping it with the front of the chair, field soccer, hand ball with a volleyball-size ball, zone basketball, base games, snatch-the-ball with a volleyball on a stand, field hockey and swimming.

3. **Muscular Dystrophy** – Passive games, table-top push ball with sideboards to keep ball on the table, blowing ping-pong balls toward each other or into goals on the table, maze boxes, pin-ball games, slot machines, billiards and pool using a cue rest, real bowling – in which the child positions the stand in advance and bowling ball is placed on a stand by a helper.

4. **Arthrogryposis** – Balloon volleyball – with a lowered net, pitch-putt golf, shuffleboard, bowling with adapted bowling frame unit, croquet, billiards and pool using a cue rest.

5. **Congenital Amputee – LEG** – Archery, badminton – in fixed position, wheelchair basketball, bowling using stool or wheelchair, arm and torso calisthenics, chinning, croquet, darts, golf – miniature, horseshoes, parallel bar, ping-pong, punching bag, riflery, rings, rope climb, shuffleboard, swimming, tumbling, and wheelchair games. **NO ARMS** – Calisthenics for trunk and legs, cross country, football – field goal kicking, swimming – with flotation device or flippers, track, if balance is adequate, dancing and rhythmics, if balance is adequate. **ONE ARM** – Same as for no arms plus croquet, golf, ping-pong, shuffleboard.

6. **Osteogenesis Imperfecta** – Tether line games, archery, volleyball – using a beachball, endball with a tetherball attached to a horizontal line, basketball shooting, wheelchair soccer – moving the ball by bumping it with the front of the chair, field soccer, handball with a volleyball-sized ball, zone basketball, base games, snatch-the-ball with a volleyball on a stand, field hockey, and swimming.

8. **Congenital Cardiac Conditions** – The physician will have to give recommendations for specific physical activities related to the severity of the condition.

9. **Hemophilia** – Mild bleeding – badminton, basketball foul shooting, croquet, dancing, rubber-tipped darts, frisbee, golf – putting and miniature, ping-pong and table games, rhythmic exercises, shuffleboard, swimming in a small group with everyone instructed to move cautiously and near poolside.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Recreational Activities		
1. Many recreational activities can be safely enjoyed by disabled students who follow the correct procedures and use the correct equipment.	1. Invite the SNT to discuss recreational activities which would be beneficial and safe for you as well as which ones would be hazardous.	1. Take slide pictures of the activities discussed with the SNT and present them to other students, discussing with them the information you learned from the SNT.
	2. Meet with the gym teacher to discuss various sports which you could safely participate in and discuss any adaptations that you would need for each sport.	2. With guidance from the gym teacher plan a gym curriculum for two months, which you could safely and beneficially participate in.
	3. Pick a sport or recreational activity of your choice and write an explanatory essay, teaching how to play the sport, the rules to follow and what adaptations of rules or equipment you need to participate.	3. Give demonstration of sport, rules, and present necessary equipment to your class.
	4. Do a research paper on the importance of physical exercise and activity to you. Your report should be from 3-5 pages in length.	4. Draw illustrations of physical activities and/or exercises which you could and should do for your health and well being.
	5. Make a bulletin board display showing the correct equipment you should use for each of five physical sports or activities of your choice.	5. With your class discuss why you would need such equipment and what dangers you would encounter if you didn't make use of them.
	6. Teach a group of students a physical sport, exercise or activity of your choice, including safety rules to observe, adaptations needed for them, and correct and safe procedures for them to follow.	6. After you have taught them, observe them playing the activity and check each one on observance of rules and safety precaution and procedures.

Secondary Safety Module

Safety at Work

BACKGROUND INFORMATION FOR THE TEACHER

General – By the time the disabled person is ready for work, his willingness and determination to cope with physical problems will be a strong factor in his employability. From his point of view, if he takes the attitude that he will expect to do the work required without asking for special consideration, he will have accepted the responsibility for overcoming his disability at work. With ingenuity he can often find ways of making adjustments which will make it possible for him to do his job well and safely. If he can do this, individual disability problems have been largely overcome.

From the employer's point of view, adjustments which are made to accommodate a physically handicapped worker are often valuable for a number of other employees as well.

In a study of 1,452 cases of handicapped employees, 32% of which were employed as handicapped and 68% of which became handicapped due to injuries (9% on the job or 91% off the job), it was found that approximately 12% higher safety record existed between those already handicapped at the time of employment as compared with those handicapped after employment had a safety record of only about 48%.

In the article "Efficient Utilization of the Worker" in *Environmental Health*, April, 1962, Robert R. Yanover, M.D., writes: "Our studies, based on reevaluation studies, as well as on-the-job studies to determine productivity, maneuverability, reliability, and accident rate, convinced us that the disabled person placed in a congenial atmosphere is able to hold his own in all of these areas, very often more so than the non-disabled worker."

There is a genuine need for the industrial physician and the safety engineer to be given the responsibility of contributing to the design of any factory. With these details for safety adaptations, full utilization of the disabled worker in industry can be reached. With the inclusion of the needed safety adaptations, whose broad acceptance would go far toward removing the prejudice against hiring the handicapped, many physically handicapped people could contribute to our society and be allowed to feel useful and worthwhile. The engineering team should evaluate both the job and the worker and modify the machine or the process by minor technical changes. Handicapped workers are highly skilled workers, trained on the job, and they can operate extremely complex modern equipment and machinery.

Other findings taken from "The Disabled Workers at Abilities Inc.," by Harold E. Yuker, Ph.D., Eugene J. Taylor, M.A., and Henry Viscardi, Jr., LLD., L.H.D., concluded that (1) many disabled persons are not all helpless. They are not only able to work productively, but are able to provide for their own transportation and otherwise lead "normal" lives. (2) The capacity of a disabled person to work productively is not necessarily related to the type of disability or the length of time spent in a hospital. Many apparently severely disabled persons who were hospitalized for long periods of time are able to work productively. (3) The capacity of a disabled person to work productively is not necessarily related to the amount of work experience he has, or the length of time that he was without employment. Many severely disabled persons with little or no work experience, or with long periods of unemployment, are able to work productively. (4) Disabled persons who are productively employed are often able to lead relatively "normal" lives. They marry, have children, own homes, autos, and TV sets, etc.

Special precuations and physical features geared to safety, (e.g. ramps, doors with automatic closing devices, changing machine controls from foot to hand control, etc.) enable the physically handicapped person to function in an office or factory, or whatever it may be, without threat to his safety and well being.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. **Industry**		
1. Industrial accident rates for the handicapped have been reduced by personnel training, safety devices, design of equipment, and safety regulations.	1. Obtain samples of protective equipment used by the physically handicapped in industry (e.g. gloves, goggles, special shoes, etc.).	1. Discuss each object, what it is used for, and why it would be important and useful to you as an employee.
	2. Invite a safety engineer to come and speak to your class on special safety adaptations needed in a plant or factory to make it accessible to the physically handicapped.	2. Go on a guided tour of a nearby factory or office building and note how well, or not so well, it is adapted for the physically disabled.
	3. Draw five illustrations or cut out magazine pictures of special equipment or safety devices that would be beneficial to a physically handicapped person seeking employment.	3. Write a list of ten safety rules which you feel are essential to the safety of physically disabled personnel working in a factory or office. Discuss your reasons for each.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Attitude Toward Occupation		
1. Disabled people with a positive attitude can be successful in many areas of employment	1. Collect pictures of men or women at various occupations and decide which ones would provide, with certain adaptations, realistic employment for a handicapped person. For each occupation chosen, write a list of safety rules and adaptations that would be essential for successful and safe employment of a disabled person.	1. Discuss which occupations would be unrealistic for a handicapped person to pursue and tell why. Then suggest various ways and means of becoming involved in each occupation through alternative job choices.
	2. Research the success (or failure) of a handicapped person of your choice in the working world. Include the barriers he/she had to face as well as how he/she handled them. (Can be a well-known figure or a personal acquaintance.)	2. Discuss what lessons you have learned from the person of your choice and tell how you feel this person has influenced your life.
	3. Role-play what occupation you would like to be yours when you complete your education.	3. Tell why you have chosen this particular occupation, what special qualifications you will need, and what adaptations will have to be made in order to insure your success at it.

General – "Fit the Job to the Man" by Doris Baldwin in *Job Safety and Health,* March, 1973, Vol. 1, No. 4, reports the findings of industrial safety biomechanics. Large companies are finding it practical to rearrange the man/machine/environment system to eliminate loss of manpower, time, and materials. Their recommendations on conditions for able-bodied workers would be beneficial for the disabled worker, and they would also save money for the employer since "plant production tends to increase as health hazards and human error decrease." Some recommendations are:

Find and eliminate the complex fatigue factors of the workplace: e.g., convenient body posture saves energy expenditure and muscle fatigue.

Efficient seating should support the parts of the body uninvolved with the tasks.

Workspace zones for the eyes, the hands, and the feet allow them to function with maximum comfort, efficiency, and safety.

Arranging work within 16 inches of the shoulders improves endurance, efficiency, comfort, and safety.

Correct layout permits the worker to function with his elbows down, not raised.

Improve level of light and eliminate sources of glare.

Eliminate industrial noise which causes the quality of work to deteriorate.

Temperature regulation increases comfort and decreases accidents.

Differently shaped control knobs or switches make discrimination by touch possible.

Rest periods at scientifically scheduled intervals are most effective in preventing fatigue.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
C. The Factory or Office		
1. Most accidents, either to a disabled or non-disabled employee, in a factory or office are preventable.	1. Interview an office worker or a secretary. Ask her what precautions she takes to avoid accidents at work. Report your findings to the class.	1. Cut out articles from newspapers and magazines dealing with accidents at work. Discuss why and how these accidents occurred and how they should have been prevented.
	2. Research statistics on safety records for disabled employees and non-disabled employees. Record your findings.	2. Write a composition on the WHY of your findings.
2. Factory and office machinery should be carefully maintained and operated.	1. Design a list of procedures an inspector should follow carefully when checking work machinery. Discuss why.	1. Make a list of rules with illustrations to demonstrate each, that a worker should follow when operating a specific piece of machinery.
	2. Research the number of accidents that occur in offices or factories due to negligence.	2. Record your findings and suggest ways of improving these results.
	3. Visit a nearby factory or office to observe a demonstration of how to operate one of their machines performed by a physically handicapped employee.	3. Note his precautions and any specially adapted measures.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
D. Precautions and Adaptations		
1. Many of the jobs held by the physically disabled involve some element of risk that can be reduced by following safety precautions.	1. Invite a representative of the State Employment Service to speak about the age requirement for certain types of jobs, and the types of jobs that are considered too hazardous for physically handicapped people to be engaged in.	1. Have the representative speak about and distribute pamphlets on jobs for the physically handicapped (should include suggestions of jobs, and ways they are adapted for the disabled, and how to go about becoming employed on these jobs).
	2. Discuss with class members any jobs that they may have held, either part-time or for the summer. Share experiences, type of work performed, adaptations provided and discuss how well they succeeded in performance of their duties.	2. Dramatize or demonstrate any dangerous incidents or accidents they encountered or witnessed while on their job. Discuss why the mishaps occurred and what should have been done to prevent their occurrence.
	3. Choose an occupation which you are interested in and design a list of safety precautions for you to follow when doing this work. (You should make precautions specific for your disability.)	3. Discuss why these precautions are essential to your safety.
	4. Illustrate drawings to show how adaptations and precautions could make employment safer for you. (Make them specific for your disability.)	4. Research newspapers and magazine articles and special reports, to learn what adaptations have been made to eliminate some of the work problems you may have met. Discuss and role-play ways and means you could make use of to cope with any of the other problems you still may have to confront. List the safety precautions you will have to follow in coping with these problems.

Secondary Safety Module

Safety in Driving

2. Spina Bifida

5. Congenital Amputee

6. Osteogenesis Imperfecta

7. Achondroplasia

All others at the discretion of the doctors.

With mechanical modifications such as a hand control for braking and accelerating, a person with a physical disability which incapacitates his lower limbs may learn to drive safely and competently. Mental alertness in reacting to traffic situations and a maturity of attitude in realizing the great responsibility he is assuming are the key factors in successful driving for both the physically disabled and non-disabled.

The driver who uses hand controls needs to have greater flexibility with his left hand since he must use the left hand for both the controls and the directional signal. A reasonable amount of strength or ability to compensate for it can be determined by the Driver Education Teacher.

One recommendation on Driver Education which has brought excellent results for the physically disabled students at Human Resources School is that the Driver Ed course be given as a one-year course instead of one-half year.

A simulator system is extremely important in helping the teacher to teach skills such as selecting gears, practicing the change from brake to accelerator, and practicing use of the hand controls.

Students should be given the opportunity to try out more than one type of hand control. Three types are the Wells-Engberg, Gresham, and Kroepke. (Experience has shown, however, that the student usually prefers the type which is on the car on which he learned to drive.) When several types are available in the simulator room, the parents may come in and see which one would be suitable for installation on the student's car in the future.

A simulator system which gives instant feedback and a printout of all errors greatly enhances the value of the Driver Ed course because it helps the teacher to evaluate the students' skills and it helps the student to be aware of a variety of situations requiring steering, hand signals, braking, accelerating and decelerating, and a steering wheel knob or "spinner."

For students who use wheelchairs, a two-door car has an advantage over a four-door for ease in getting the wheelchairs in and out of the car.

Power seat controls are a great advantage. The best would control forward and back, up and down, and tilting back and forth, which is important for leverage.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. Driving		
1. Successful driving for both disabled and non-disabled depends on sound attitudes with respect to: the driver the vehicle the highway.	1. Choose another student and invent five driving situations to which he can apply IPDE. Identification of problem Prediction of what may happen Decision on what to do Execution of procedure	1. Exchange situations with the other student and work out your IPDE. Ask your teacher to check your answer.
	2. Report on the regulations which the government has enacted to make the vehicle safer: e.g. collapsible steering wheel, padded dashboard, seatbelts, yearly inspection of car in New York and other states, minimum of 1/16 inch tread on tires.	2. In a round-table discussion, brain-storm for ideas that would make the vehicle safer for the disabled drivers and passengers. Send your ideas to the Commissioner of Motor Vehicles.
	3. Demonstrate situations in which a driver must take the "last-clear chance" to avoid an accident.	3. Role-play the part of a driver who does not take the "last-clear chance" to avoid the accident. Then discuss his feelings, his self-control, his maturity, the possible consequences to his life and future.
	4. Choose a destination for an automobile trip. Write for road maps and information on restaurants and motels or other lodgings which would be accessible. Then plan the route, calculate the mileage and the amount of gasoline and approximate cost. Find out the cost and the needed procedures for a complete auto check-up before starting out.	4. Devise a plan of action to overcome unforeseen problems like tire or motor trouble, detours, architectural barriers in motels and restaurants. Write to AAA and two large oil companies to find out what special road services they could offer you as a driver with a physical disability.

General – Students may explore the best way for getting themselves into and out of the car. Some possibilities are a rope, a sliding board, or a firm cushion.

For disabled students who are passengers in a car, seatbelts and non-slippery seat covers are essential for those with poor sitting balance and for those subject to weakness or loss of consciousness.

Even with special accommodations, not every disabled student will be able to drive. However, this cannot be truly determined without giving them an opportunity to try to learn. Determination and ability to compensate for a disability may become apparent only when the student actually begins to learn on the simulator. This extra effort on the part of the school and the teacher is important because the ability to drive a car enables a person with a physical disability to transport himself to a job and to keep in contact with the every day world.

Color motion picture: Quadraplegic Driver Training

Available from:

Cinema Pictures Inc.
10212 Noble Avenue
Mission Hills, California 91343

It is a very good demonstration of how driving is managed by quadriplegics.

It emphasizes the need for a well-equipped car to compensate for disability.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
B. Pedestrian Safety		
1. Through preparedness you can adapt to safe pedestrian practices.	1. Make advance arrangements with the traffic officer in the neighborhood of the school. Then on the arranged date, take a short "walk" with your class or teacher to the nearest traffic crossing in the vicinity. With a stop watch, time the length of red light intervals. Time each other for crossing the road and note the time needed. Also survey the conditions of curbs, cement walks, etc. in the neighborhood.	1. Report the data to your class or teacher. In a round-table discussion suggest improvements in procedures for wheelchair-bound students to facilitate safe "pedestrian" participation.
	2. Make advance arrangements with the local chamber of commerce or particular store owners. On the same or another day, go to a nearby shopping area and observe the accessibility of products, room for wheelchairs, etc. in a store.	2. Follow up your visit with a thank you letter to the owner and include suggestions for making his store more accessible to disabled students.

Secondary Safety Module

Safety in Emergencies

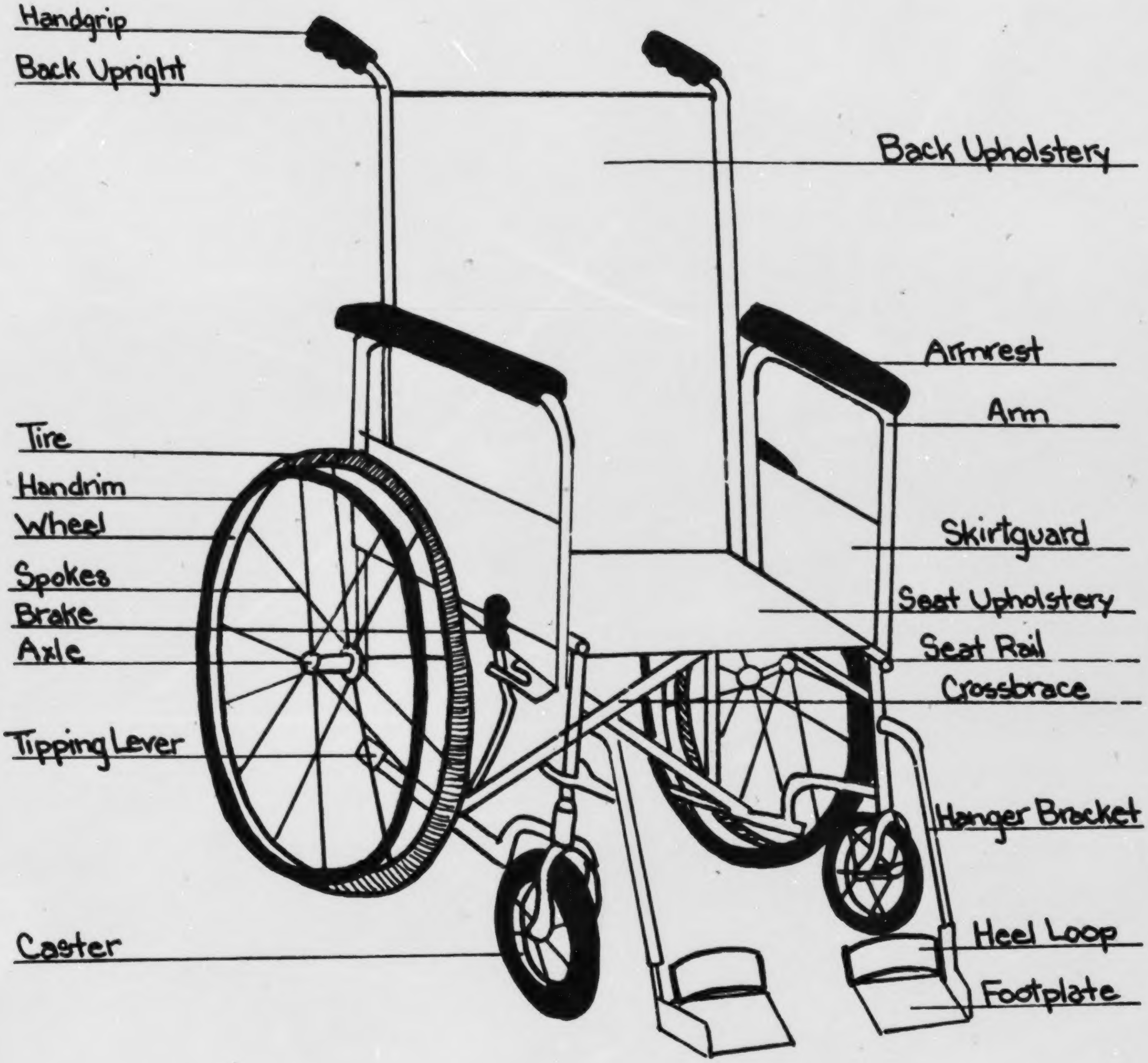
General – The student can generally learn to become quite independent. Many student can move themselves about, either in their wheelchair or on crutches and some can even move about without assistance from either of them. They can use their hands, fingers and therefore, are capable of doing many things. By being knowledgeable about procedures to follow in emergency situations the students on the whole could function quite independently and responsibly.

Survival in time of a real disaster may depend on preparing an exit route, finding a way to move by oneself, or having access to shelter. Preparedness is the best safety insurance.

For their own self-image, disabled children should feel that they have a stake in the welfare of the other family members and a responsibility toward the rest of the family. This sense of responsibility needs to be developed since they have usually been waited on and have not had the opportunity to learn to help others.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
A. What to Do		
1. Disabled students who share family responsibility can develop independence in emergency situations.	1. Family involvement activity: Ask each member of your family: How do I help you? In what other way could I help you?	1. Invite them to a round-table discussion and share your data. Tell each member of the family how he helps you. Then plan a course of action in which each member of the family plans his participation in one of the following emergency situations: fire, civil emergency, or natural disaster.
	2. Compile a list of specific emergencies each family member should be prepared to meet.	2. Practice emergency procedures for each situation.
	3. Invite a member of the Fire Department to discuss what to be aware of as warning signals of a fire. Also, have him include the proper procedure for you to follow when reporting a fire and exiting your home.	3. Dramatize reporting a fire that has broken out in your home or a neighboring home or store. Include what number you would dial, what you would say and what directions you should give.
	4. Draw a floor plan of your home showing the location of the rooms, all doorways and stairways. Mark out in RED the best route by which to leave your home if a fire should occur. Map out in GREEN an alternative route you could use if your first choice was not convenient at the time.	4. Take five practice fire drills, three for your RED route and two for your GREEN route. Time each drill to see how long it takes you.
	5. Invite SNT to discuss First Aid necessary to treat burns. With her assistance, make a first aid kit for your use if you or someone you are with is burned. Have her include the various types of burns and learn how to distinguish them.	5. Make a bulletin board display showing twelve ways that you could be burned with a warning slogan accompanying each illustration. The illustrations should be activities or items which you come in contact with frequently. They may be taken from magazine or newspaper pictures of hand drawn by you.

CONCEPTS	STUDENT ACTIVITIES	STUDENT SELF-EVALUATIONS
	6. Do a research paper on poisons. Find out what they are, the various types, and where they are found. Include plants, household products and foods. Whenever possible illustrate each poison.	6. Invite SNT to discuss what to do if you or someone in your family is poisoned. Make a chart listing the various types of poisonings and under each list the antidotes needed.
	7. Invite the SNT to demonstrate First Aid needed for bad cuts, sprained or strained muscles, broken bones, etc.	7. Dramatize proper procedures to follow if an emergency occurs, e.g.: broken bone, serious cut, sprained ankle. Have SNT check you for your thoroughness and ability.
	8a. Discuss what you should do if an emergency occurs which requires more than immediate First Aid.	8a&b. Dramatize what to do when going to or taking someone else to the emergency room at a nearby hospital.
	8b. Map out a route to the nearest hospital in your area.	
	8c. Compose a letter that your parents should write if they are leaving you with a friend or relative for several days. It should grant permission for the adult you are staying with to sign for any emergency care you need while staying with them.	8c. Discuss why it is essential for your parents, if you are under 18 and staying with a relative or friend for a period of time, to write a letter and sign it, stating their permission to allow those you are staying with to sign for any emergency care you may need when staying with them.
	9. With Driver Ed teacher, discuss how to report a car accident that you either witnessed or were part of. Include what information you would have to report.	9. Discuss with SNT what type of First Aid you could administer if you were present at the scene of an accident.
	10. Draw up and plan to compensate for a cut-off of energy and power which would eliminate: air-conditioners, heaters, dehumidifiers, respirators.	


Handgrip
Back Upright
Tire
Handrim
Wheel
Spokes
Brake
Axle
Tipping Lever
Caster
Back Upholstery
Armrest
Arm
Skirtguard
Seat Upholstery
Seat Rail
Crossbrace
Hanger Bracket
Heel Loop
Footplate

APPENDIX

Types of Wheelchairs:

- Fixed back
- Reclining back
- Lightweight
- Heavy Duty
- Motorized
- One-Wheel Drive
- Custom Built

Wheelchair Features that can be varied:

- Brakes
- Drive wheels
- Caster locks
- Tires
- Handrims and modifications
- Upholstery
- Seats
- Backs
- Arms
- Footrests and elevating legrests
- Legrest panel
- Footplate
- Cushions
- Anti-tipping devices
- Wheelchair narrower
- Reclining bars
- Two-speed wheels

Equipment that can be made for a wheelchair:

- Sliding board
- Arm tray
- Lapboard
- Feeder board attachment
- Low lapboard
- Seatboard
- Horseshoe cushion
- Ramp

CARE OF WHEELCHAIRS

Your wheelchair is a very important and expensive piece of equipment. Read the specific instructions for the care of your wheelchair which are in the booklet which came with your chair when it was new. The following recommendations will help you to keep your wheelchair in a condition which you can be proud of.

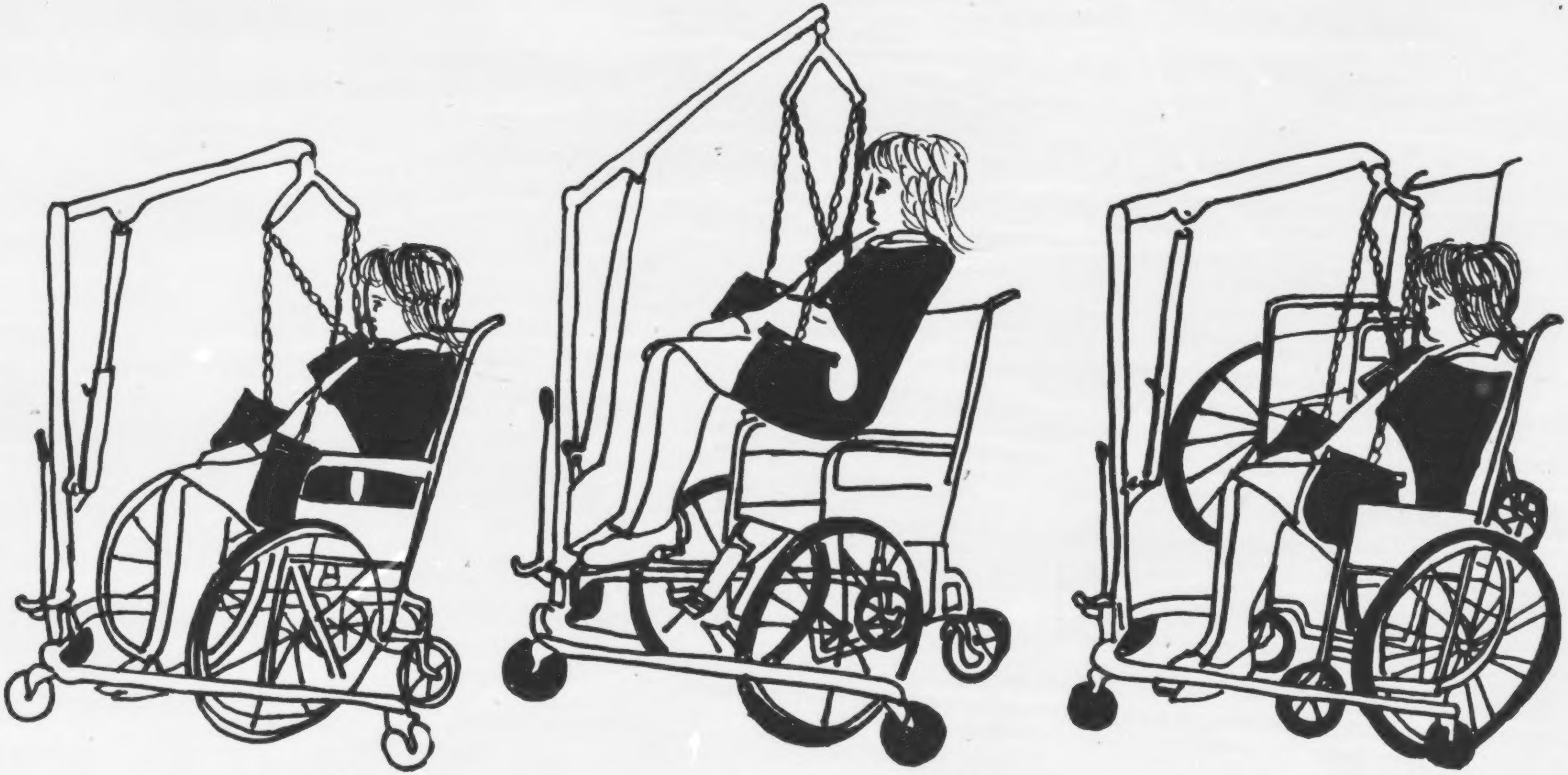
A. Cleaning the wheelchair
   1. Dust daily
   2. Once a week, wipe the metal parts and brush the upholstery
   3. Once or twice a month:
      a. Polish the metal parts with a good chromium polish with wax.
      b. Wipe right away after exposure to water in order to prevent rust.
      c. Sponge leather and fabric with a damp cloth. Clean leather parts with saddle soap if soiled.

B. Oiling the wheelchair – avoid too frequent oiling – once or at the most twice a month, use only *one or two* drops of light machine oil on:
   1. center bolt
   2. hinges
   3. attachments

C. Care of rubber tires and wheels
   1. Maintain proper air pressure in pneumatic tires
   2. Check for loose bolts, nuts, spokes.

Always replace broken parts and tighten loose parts as soon as possible so as to make your wheelchair last as long as possible and to keep it in good appearance; but most of all do these things to prevent accidents which may lead to injury to yourself or to others.

USING THE HOYER LIFT



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TRANSFERRING

Safety precautions when using the Hoyer lift

1. Keep the adjustable base widened when in use. Narrow the base only when necessary to go through doorways.
2. Check to see that the S-hooks are hooked all the way into the chains. Check also that the S-hooks on the chains are not caught on the wheelchair when the patient is being lifted.
3. Seats should be close to the knees to give optimum safety. Patient's arms should be outside the chains if seat and back (10-C) are used.
4. Older style lifters should be checked periodically to see if worn parts should be replaced or reconditioned. The nut on the swivel bar hook should be checked for wear.
5. Use care, discretion and common sense in judging whether a severely spastic patient can be lifted. Restraining straps can be supplied upon request.

Wheelchair transfer – helpless person

1. Have wheelchair moved as close as possible to other chair.
2. Have brakes locked or have someone hold wheelchair steady if there are no brakes.
3. Ask person helping you to give support at your waist, not under your arms. (Your pants belt can be used for lifting).
4. Have person helping you stand in front of you with one foot forward and knees flexed so he can lift with his legs rather than his back.

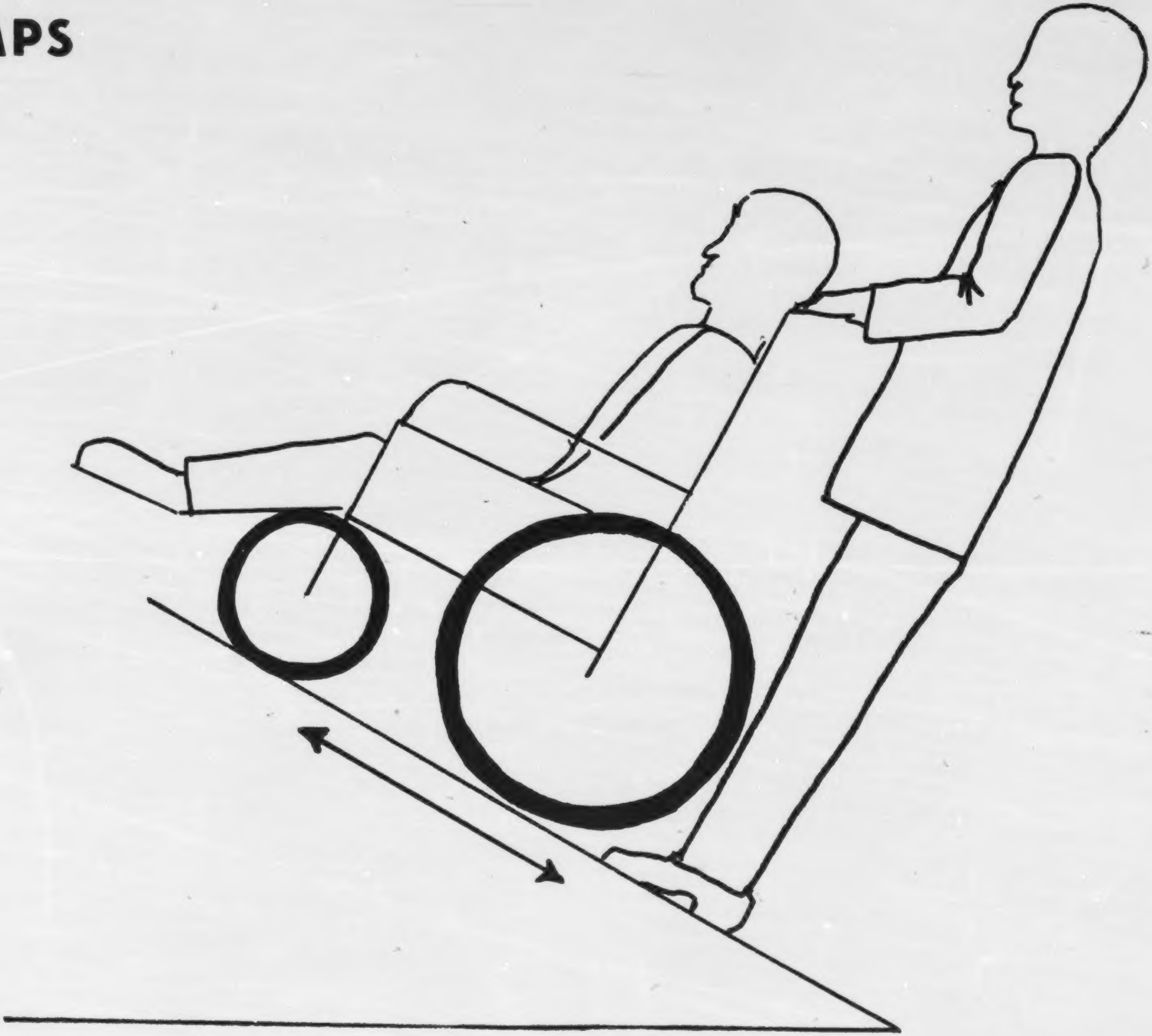
Wheelchair transfer – person with some leg function

1. Have wheelchair moved as close as possible to other seat.
2. Have brakes locked or have someone hold the wheelchair steady if there are no brakes.
3. Move to edge of seat and adjust balance.
4. Have person helping you stand in front of you and get a firm hold at your waist.
5. Lean forward, pushing down on the armrest and bear as much weight as possible on your legs.
6. Have person helping give a boost at the waist as you come to a standing position.
7. Move your hand to the arm or seat of the other chair and have helper continue to give support at your waist.
8. Pivot around and ease back into other seat.

Sitting – transfer

1. Move wheelchair as close as possible to other seat at an angle to it.
2. Lock brakes.
3. Remove your feet from the footrests to the floor and swing footrests back out of the way.
4. Remove armrest nearest to other seat and place on back of wheelchair.
5. Person helping should stand in front of you with his feet apart and knees flexed, supporting you firmly at the waist.
6. Come forward to the edge of your wheelchair and adjust your position and balance.
7. Slide your hips toward the other seat and turn your body slightly away.
8. Place your hands securely, one on the wheelchair and one on the other seat or on the armrest.
9. Person helping should support you at your waist while you push down with your arms, lift your hips off the wheelchair and swing onto the other seat.

RAMPS



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COPING WITH WHEELCHAIR OBSTACLES

Curbs: (Going down curb to the street)

a. Turn chair backwards.
b. Ease down until large wheels hit pavement.

(Going up curb to sidewalk)

a. Have chair face forward.
b. Tilt chair back far enough so that small wheels are on sidewalk first.
c. Ease rest of chair up onto sidewalk.

Ramps: (Going down) – with assistance

a. Turn chair around and go down backwards.
b. Person assisting will do down backwards also, thereby keeping the chair from picking up momentum.

Toilets:

a. Position wheelchair facing toilet.
b. Brakes on and footrests up.
c. *Male* should unfasten trousers before getting out of the wheelchair so that trousers fall when he stands.

   Female should stand in front of toilet and either lean against the wall or push with her strong leg against the toilet for support to free her hand to handle her clothing.

d. Lean forward, turn on strong foot and slowly sit down on the toilet seat.
e. Reverse procedure to get up from toilet.

Stairs:

At least *2* people are needed to lift a person and his wheelchair up and down stairs.

(Going up stairs)

a. Wheelchair should be backwards.
b. One person should hold onto the handgrips firmly.
c. Tilt chair quite far back.
d. Pull chair up one step at a time, resting it on each step on the large back wheels.
e. Second person should face the chair, grasp the rods to which the footrests are attached and lift the front of the chair.

BRACES

"A brace is an orthopedic appliance or orthotic device, one of many elements that may be used in treating neuro-muscular and skeletal disabilities . . . . In general, a brace is meant to promote normalcy either posturally or functionally . . . . it may either permit or restrict movement."

It is custom-made and prescribed, usually by a specialist in physical medicine or orthopedics.

When prescribed, it is important to understand the advantages to the patient of wearing the braces. Some important objectives are:

support of body weight
prevention of deformities
partial correction or lessening of deformities
maintenance of optimal alignment of body segments
control of involuntary movements

Emphasize its functional value.

Types of Braces:

Double-bar Brace
Dropfoot Brace
Ischial weight-bearing Brace
Jewett Brace
Klenzak Brace
Knee Brace
Knight spinal Brace
Long leg Brace
Milwaukee Brace
Single-bar Brace
Short leg Brace
Taylor Brace

CARE OF MECHANICAL BRACES

I. **Parts of a Brace**

- A. Metal parts – steel is used for durability and strength
  - 1. hinges
  - 2. joints
  - 3. frames – sometimes made of duraluminum to decrease weight
- B. Soft parts – usually made of good quality leather, sometimes made of plastic for ease in cleaning:
  - 1. straps
  - 2. belts
  - 3. linings
- C. Shoes for braces – made of good quality leather
  - 1. Properly attached to braces
  - 2. Properly fitted – especially if there is loss of sensation
    - a. must be longer than the foot if a foot plate is used
    - b. perfect fit if no foot plate is used
  - 3. Properly care for
    - a. polish and wax
    - b. repair as needed
    - c. replace frayed laces and keep them free from knots

II. **Care of Braces**

- A. Clean joints and locks once a week
  - 1. open all locks
  - 2. remove dust and lint with a hairpin or wire
  - 3. wipe with dry cloth
  - 4. apply one drop of machine oil to each joint. DO NOT ALLOW OIL TO CONTACT LEATHER PARTS.
- B. Leather straps and linings
  - 1. wash with warm water and saddle soap which preserves leather
  - 2. avoid using cleaning fluids and chemical agents which dry leather causing cracking and deterioration

C. Check periodically and frequently for:
  1. correct alignment – joints should come at body joints
  2. loose or missing screws and rivets
  3. condition of straps, buckles and laces

Repair Kit

Everyone who owns a brace should have a repair kit for emergencies. This kit should contain:

1. a screw driver
2. extra shoe laces
3. extra screws

Brace Bag

If you sometimes carry your brace with you, a brace bag is good protection for it.

Construction:
1. Cut canvas or demin material large enough to cover the brace.
2. Sew a long zipper up one side and across the top.
3. Attach a canvas or leather handle at the top. If large, this handle may be used to hang the brace bag on a bed post, hook, or even a doorknob.

CARE OF BRACE WEARER NECESSARY:

1. Proper procedure in putting on a short leg brace.
2. Proper procedure in putting on a long leg brace.
3. Skin care – inspection of skin for reddened areas, caused by rubbing or irritation should be a nightly routine.
4. Precautions against skin damage are especially important for persons with poor circulation or lack of sensation.
5. Brace should not rub or press on any part of the body excessively. Skin breakdown can result or, in some instances, patients develop contact dermatitis.

SELF-HELP DEVICES AVAILABLE:

Walkers – various types

Crawler

Crutches: regular
wooden
aluminum
ortho-crutch
Candian and form crutches

Crutch and cane tips – various types

Canes: adjustable aluminum
wood
tripod
T-cane

Toilet Safety Frame

Raised toilet seat attachments

Bathtub: safety rails
stool
seat

Bath seat lift
Grab bars
Shower chair
Adult diapers
Adult waterproof pants

STUDENT QUESTIONNAIRE/PARENT QUESTIONNAIRE

(Wording changed to "your child" as appropriate)

Student's Name:____________________ Age:____ Yrs.____ Mos. Grade or Class:______________ Date: ______________

I. Which activities of daily living (listed below) become health problems because of your (your child's) physical disability? (Check one in each column).

ADL	How Managed		Degree of Problem			Description of Problem	Method of Handling
	Independently	With Assistance	Mild	Moderate	Severe		
1. Getting in & out of bed							
2. Toileting or Bowel & Bladder Management Program							
3. Bathing							
4. Putting on braces							
or Other Appliances							
5. Dressing							
6. Moving around House							
7. Feeding							
8. Brushing Teeth							
9. Getting in & Out of House							
10. Night Care							

II. Please list additional health problems, not listed above, which you have because of your (your child's) physical disability

Description of Problem	**Method of Handling**

III. Please check which of the following special accommodations you have at home for your (your child's) safety.

	Yes	No	If Yes, please give description of accommodation
Location of bedroom Location of other room (specify)			
Means of managing stairs			
Fire safety Alarm			
Telephone in room			
Alert sticker for firemen on front door			
Extinguishers			
Exit			

Other accommodations:
(specify)

IV. Please check the priority of importance, in relation to you, (your child) of the following topics of the New York State Health Education curriculum:

	Priority of Importance					Your suggestions on the topic
	Highest	High	Moderate	Low	Lowest	
Physical Health: Health Status (Maintenance)						
Nutrition						
Sensory Perception						
Dental Health						
Disease Prevention & Control						
Sociological Health Problems: Smoking & Health						
Alcohol Education						
Drugs & Narcotic Education						
Mental Health: Personality Development						
Sexuality (Sex Education)						
Family Life Education						
Environmental & Community Health: Environmental & Public Health						
World Health						
Ecology & Epidemiology of Health						
Consumer Health						
Education for Survival Safety						
First Aid and Survival Education						
Other suggested topics						

V. Please check which of the following equipment you have (your child has) and make use of at home:

	HAVE		USE		
	Yes	No	Yes	No	
Ramp to front or back door					
Hoyer lift for toilet & tub					
Hoyer lift for car					
Hoyer lift for transferring you from wheelchair to bed					
Motorized wheelchair					
Standard wheelchair					
Stroller-type chair					
Walker					
Hand rails in bathroom					
Hand rails on walls in hall					
Hand rails on other places					
Braces					
Commode chair					
Adapted car for transporting you					
Checkercab					
Van					
Station Wagon					
Other (specify)					
Intercom system					
or other emergency system (specify)					

VI. Please rate your (your child's) health status or condition in each of the following areas:	Excellent	Very Good	Good	Fair	Poor
Bones					
Teeth					
Posture					
Skin					
Muscles					
Eyes					
Ears					
Weight					
Hair					
Sleeping Habits					
Appetite					
Digestion					
Elimination					
Resistance to infection					
VII. Please rate your (your child's)					
1. Knowledge relating to your health needs					
2. Physical adjustment to your disability at this time					
3. Emotional acceptance or adjustment at this time					
4. Socialization with family					
schoolmates					
other friends					
5. Interest in life and surroundings					

VIII. List your (your child's) hobbies or special interests:

IX. Please indicate the degree of difficulty of obtaining complete health care for you (your child) outside of the home.	None	Mild	Moderate	Severe	Explain
Medical check-ups (general)					
Dental care					
Eye care					
Ear, nose, and throat care					
Emergency care					
Physical therapy					
Shoe or brace check-ups					
Other Health care (specify)					

X. Are you (is your child) left alone at home on occasion? ☐ Yes ☐ No

What safety precautions are taken when you (your child is) left home?

TEACHER'S & VOLUNTEER'S QUESTIONNAIRE

Teacher's or Volunteer's Name ______________________ **Student's Name** ______________________ **Date** __________

I. Which activities of daily living become health problems for this student in school because of his physical disability? (Check one in each column).

ADL	How Managed		Degree of Problem			Description of Problem	Method of Handling
	Independently	With Assist.	Mild	Moderate	Severe		
1. Getting in and out of school building							
2.a) Putting on or removing: outer clothing							
b) bathing suit, costume, art smocks, etc.							
3. Adjusting or handling appliances (braces, crutches)							
4. Mobility: Wheelchair							
Ambulation							
Use of hands for schoolwork							
Standing							
Sitting							
Eating							
5. Toileting or bladder and bowel management program							
6. Washing hands and face							

II. Please list additional health problems, not listed above, which this student has in school because of his disability.

Description of Problem	Your Method of Handling

III. Please list special accommodations you have made in school for the safety and/or physical welfare of this student.

IV. Please check which of the following equipment you have available and make use of in school for the student:

	Have	Make Use Of
1. Writing equipment		
2. Walkers		
3. Crutches		
4. Lap Boards		
5. Seat belts		
6. Hoyer lift for toileting		
7. Standing box		

V. Please list your suggestions for any additional accommodations (equipment, procedures, etc.) which might be made for this student in school.

VI. Please check the priority of importance, in relation to this student, of the following topics of the New York State Health Education curriculum:

	Priority of Importance					Your suggestions on the topic
	Highest	High	Moderate	Low	Lowest	
Physical Health: Health Status (Maintenance)						
Nutrition						
Sensory Perception						
Dental Health						
Disease Prevention & Control						
Sociological Health Problems: Smoking & Health						
Alcohol Education						
Drugs & Narcotic Education						
Mental Health: Personality Development						
Sexuality (Sex Education)						
Family Life Education						

(continued on next page)

VI. Topics from New York State Health Curriculum (continued)

	Priority of Importance					Your suggestions on the topic
	Highest	High	Moderate	Low	Lowest	
Environmental & Community Health						
Environmental & Public Health						
World Health						
Ecology & Epidemiology of Health						
Consumer Health						
Education for Survival						
Safety						
First Aid and Survival Education						
Other Suggested Topics						

	Excellent	Very Good	Good	Fair	Poor
VII. Please rate the health status or condition of this student in each of the following areas (if known).					
Bones					
Teeth					
Posture					
Skin					
Muscles					
Eyes					
Ears					
Weight					
Hair					
Sleeping Habits					
Appetite					
Digestion					
Elimination					
Resistance to infection					
VIII. Please rate this student's:					
1. Knowledge relating to his health needs					
2. Physical adjustment to his disability at this time					
3. Emotional acceptance or adjustment at this time					
4. Socialization with:					
schoolmates					
others					
5. Interest in life and surroundings					
IX. Please list his talents or interests:					

ELEMENTARY STUDENT SELF-EVALUATION CHECKLIST

Human Resources School
Albertson, New York

Grade: ____________________

As a result of what I learned about safety since the health education project began, this is how I would rate my own understanding of the safe thing to do in each of these situations. (check one column for each topic)

	Very Good	Good	Not Too Good
1. Activities of Daily Living			
2. Traffic Safety			
3. Bus Safety			
4. Water Safety			
5. Fire Safety			
6. Home Safety			
7. School Safety			
8. Outdoor Safety			

Circle one:

I am now (more careful / the same / less careful) about my own safety.

'SECONDARY STUDENT SELF-EVALUATION CHECKLIST

Human Resources School
Albertson, New York

Grade: ______________________________

As a result of what I learned about safety since the health education project began, this is how I would rate my own understanding of the safe thing to do in each of these situations. (check one column for each topic)

	Very Good	Good	Not Too Good
1. Accident Problems			
2. Safe Behavior			
3. Safety in the Home			
4. Safety in the School			
5. Safety in Physical and Recreational Activities			
6. Safety at Work			
7. Safety in Driving			
8. Safety in Emergencies			

Circle one:

I am now (more careful / the same / less careful) about my own safety.

USEFUL ADDRESSES FOR THE HANDICAPPED

ADAPTATIONS

List of pamphlets about adaptations

Adaptations for Disabled Homemakers
Sister Kenny Institute
1800 Chicago Avenue
Minneapolis, Minnesota 55404

American Rehabilitation Foundation
1800 Chicago Avenue
Minneapolis, Minnesota 55404

"Handbook for Paraplegics and Quadriplegics"
National Paraplegia Foundation
333 North Michigan Avenue
Chicago, Illinois 60601

Kitchen and Bathroom Adaptations
Paralyzed Veterans of America
7315 Wisconsin Avenue
Washington, D. C. 20014

Publication Office
Institute of Rehabilitation Medicine
400 East 34th Street
New York, New York 10016

Telephone Company Services for the Handicapped
"Services for Special Needs"
Box 99
Bowling Green Station,
New York, New York 10004

Winco Products
Winfield Co., Inc.
3062 46th Avenue North
St. Petersburg, Florida 33714

EQUIPMENT

American Hospital Supply Corp.
2020 Ridge Avenue
Evanston, Illinois 60201

Everest and Jennings, Inc.
1803 Pontius Avenue
Los Angeles California 90025

Ted Hoyer and Co. Inc.
2222 Minnesota Street
Oshkosh, Wisconsin 54901

G. E. Miller, Inc.
489 South Broadway
Yonkers, New York 10705

J. A. Preston Corporation
71 Fifth Avenue
New York, New York 10003

Rehab Aids
5931 S. W. 8th Street
Box 612
Miami, Florida 33144

Sears, Roebuck and Company
4640 Roosevelt Boulevard
Philadelphia, Pennsylvania 19132

Automobile Adaptation Equipment

Gresham Driving Aids
P. O. Box 405
30800 Wixom Road
Wixom, Michigan 48096

USEFUL ADDRESSES FOR THE HANDICAPPED (continued)

Automobile Adaptation Equipment (continued)

"Vehicle Controls for Disabled Persons"
American Automobile Association
1712 G Street, N.W.
Washington, D.C. 20006

Wells-Engberg Co., Inc.
P. O. Box 6388
Rockford, Illinois 61107

Clothing Adaptations

Cleo Living Aids
3954 Mayfield Road
Cleveland, Ohio 44121

"Clothes for the Physically Handicapped Homemaker"
(Eco. Research Report No. 12)
Institute of Home Economics
U. S. Department of Agriculture
Washington, D. C. 20006

"Fashion-Able, Inc."
Rocky Hill, New Jersey 08553

"Flexible Fashions"
Arthritis Foundation
221 Park Avenue South
New York, New York 10003

"Men's Fashions for the Wheelchair Set"
by Leinenweber, Inc.
Brunswick Building
69 West Washington Street
Chicago, Illinois 60602

Sheltered Workshop for the Disabled, Inc.
200 Court Street
Binghampton, New York 13902

Sports

American Association of Health, Physical
Education and Recreation
1201 16 Street N.W.
Washington, D. C. 20036

Joseph Bulova School of Watchmaking
40-24 62 Street
Woodside, New York 11377

National Wheelchair Basketball Association
University of Illinois
Rehabilitation–Education Center
Oak Street and Stadium Drive
Champaign, Illinois 61820

American Wheelchair Bowling Association, Inc.
2635 N. E. 19 Street
Pompano Beach, Florida 33062

Recreation and Travel

Bridge Travel Services
832 East Bridge Avenue
Delray Beach, Florida 33444

Evergreen Travel Service
19429 44th Street
Lynnwood, Washington 98036

Flying Wheels Tours
P. O. Box 382
Owatonna, Minnesota 55060

Handy-Cap Horizons
3250 East Loretta Drive
Indianapolis, Indiana 46277

USEFUL ADDRESSES FOR THE HANDICAPPED (continued)

Recreation and Travel (continued)

"Motels With Wheelchair Units"
National Easter Seal Society
2023 West Ogden Avenue
Chicago, Illinois 60612

"National Park Guide for the Handicapped"
Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

Rambling Tours, Inc.
P. O. Box 1304
Hallendale, Florida 33009

Rehabilitation International, U.S.A.
17 East 45 Street
New York, New York 10017

The Wheelchair Traveler
Ball Hill Road
Milford, New Hampshire 03055

Your Garden & Your Rheumatism
Canadian Arthritis & Rheumatism Society
45 Charles Street East
Toronto 5, Canada

Sources of General Information

Committee for the Handicapped
People-to-People Program
1146 16 Street N. W.
Washington, D. C. 20036

Be OK Sales Co.
Box 32
Brookfield, Illinois 60513

Sources of General Information (continued)

I N A MEND Institute
Human Resources Center
I. U. Willets Road
Albertson, New York 11507

National Easter Seals Society for
Crippled Children and Adults
2023 West Ogden Avenue
Chicago, Illinois 60612

President's Committee on Employment
for the Handicapped
Washington, D. C. 20210

Rheumatoid Arthritis Handbook for Patients
The Arthritis Foundation
Box 2525
New York, New York 10001

Periodicals

Accent on Living
P. O. Box 726
Gillum Road and High Drive
Bloomington, Illinois 61701

Paraplegia News
935 Coastline Drive
Seal Beach, California 90740

Rehabilitation Gazette
4502 Maryland Avenue
St. Louis, Missouri 63108

Toomey Gazette
Box 149
Chagrin Falls, Ohio 44022

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American Association for Health, Physical Education and Recreation. Health Concepts: Guides for Health Instruction. Washington, D.C.: National Education Association, 1967.

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Health Education Curriculum Guide. Medford, New Jersey: Health Education International, 1971.

Nassau County School Health Council-Curriculum Steering Committee. Curriculum Guide for Health and Safety Kindergarten through Grade Twelve. Roslyn, New York: Nassau Tuberculosis and Health Association Inc., 1966.

New York City Board of Education. Education of the Physically Handicapped. Curriculum Bulletin No. 8. New York: Bureau of Curriculum Development, 1968.

New York State Education Department. Fire Prevention Education 1974. Albany: Bureau of Curriculum Development, 1974.

New York State Education Department. Prototype Curriculum Materials for the Elementary and Secondary Grades: Health. Strand V. Safety Education. Albany: Bureau of Curriculum Development, 1970.

Ohio State Department of Education. Programs for Orthopedically Handicapped Children in Ohio Public Schools, Columbus: Division of Special Education, 1968.

Seattle Public Schools. A Curriculum Instruction Guide for Orthopedically Handicapped Children. Seattle: Author, n.d.

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Mayshark, Cyrus & Leslie Irwin. Health Education in Secondary Schools. St. Louis: C. V. Mosby, 1968.

Moss, Bernice R. (ed.). Health Education: A Guide for Teachers and a Text for Teacher Education. Project of National Education Association and the American Medical Association: Joint Committee on Health Problems in Education: Washington, D.C., 1961.

National Education Association and the American Medical Association: Joint Committee on Health Problems in Education. Suggested School Policies. Washington, D.C. and Chicago: 1966.

National Education Association and the American Medical Association: Joint Committee on Health Problems in Education. "Why Health Education?" Washington, D.C. and Chicago: Authors, n.d.

Sinacore, John S. Health A Quality of Life. Toronto, Ontario: Collier-Macmillan Canada Ltd., 1970.

Wilson, Charles (ed.). School Health Services. Washington, D.C.: National Education Association, and Chicago: The American Medical Association, 1969.

Rehabilitation References

American Heart Association. Do It Yourself Again. New York City: Author, 1965.

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Flaherty, Patricia Toohey. Braces: A Primer for Nurses. Minneapolis: American Rehabilitation Foundation, 1968.

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Grant, W. Russell. Principles of Rehabilitation. Edinberg and London: E. & S Livingstone Ltd., 1963.

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Books Helpful to Parents of Handicapped Children

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Finnie, Mancie R. Handling the Young Cerebral Palsied Child at Home. New York: E. P. Dutton & Co., Inc., 1970.

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Gall, Elena D. Special Educational Needs of Children with Muscular Dystrophy. New York City: Muscular Dystrophy Associations, Inc., 1957.

Greenspan, Leon, M.D. "Myopathies." Modern Treatment, Vol. 5, No. 5. September, 1968. pp 1036-1045.

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AMYOTONIA CONGENITA

Muscular Dystrophy Associations of America. Oppenheim's Disease or Benign Congenital Hypotonia Fact Sheet. New York (1970 Broadway): Author, n.d. 3 pages.

Brief description of the causes, symptoms, inheritance pattern, and progression of Oppenheim's disease, which causes the muscle weakness known as the amyotonia congenita syndrome. Covers medical treatments and research. Offers local MDAA offices as sources of additional information.

Muscular Dystrophy Associations of America. Werding-Hoffman Disease or Infantile Spinal Muscular Atrophy Fact Sheet. New York (1970 Broadway): Author, n.d. 3 pages.

Same format as the MDAA fact sheet on Oppenheim's Disease. General information on Werding-Hoffman disease, which also causes the amyotonia syndrome. Offers local MDAA offices as sources of additional information.

ARTHRITIS

U.S. Department of Health Education, and Welfare. Arthritis. Washington, D.C.: U.S. Government Printing Office, 1968. 6 pages. $ .05 per single copy.

Brief historical description of research and treatment related to rheumatoid arthritis, osteoarthritis, and gout. General information on causes and symptoms of the disease. Includes sources of additional information.

BIRTH DEFECTS

National Foundation – March of Dimes. Birth Defects. White Plains, New York (P.O. Box 2000): Author, n.d. 14 pages.

Simple statistical information on the prevalence of common birth defects in the United States and on those which appear after birth. Description of hereditary and environmental influences, prevention, and treatment.

CEREBRAL PALSY or SPASTIC PARAPLEGIA

Seaver, Jacqueline. Cerebral Paley – More Hope Than Ever. New York (381 Park Ave.): Public Affairs Committee, 1969. Pamphlet # 401. 27 pages. $ .25 per single copy.

General information on the causes and symptoms of cerebral palsy. Covers special problems related to the disability, child development, and employment. Describes treatment and research.

United Cerebral Palsy Associations. Realistic Educational Planning for Children With Cerebral Palsy. New York (66 E. 34 St.): Author, n.d. 24 pages. & .25 per single copy.

A source of information and guidance for school personnel involved in the psychological evaluation of cerebral palsied children. Coverage includes problems in the administration and interpretation of standardized tests. A bibliography of suggested reading is included.

CHARCOT-MARIE-TOOTH DISEASE

Muscular Dystrophy Associations of America. Charcot-Marie-Tooth Disease or Peroneal Muscular Atrophy Fact Sheet. New York (1970 Broadway): Author, n.d. 3 pages.

Brief information on Charcot-Marie-Tooth disease, presented in the same format as the MDAA fact sheets on amyotonia congenita. Offers local MDAA offices as sources of additional information.

DYSAUTONOMIA

Dysautonomia Association. Educating the Child With Familial Dysautonomia. Brooklyn, New York (32 Court St.): Author, 1967, 15 pages.

A practical guide to help parents deal with the educational lives of their dysautonomic children. Includes information on testing, expectations, relations

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DYSAUTONOMIA (continued)

with teachers, parents' role in schooling, and different types of schools.

Riley, C. M. Living With A Child With Familial Dysautonomia. Brooklyn, New York (32 Court St.): Dysautonomia Association, 1956, 40 pages.

Detailed information for parents of dysautonomic children. Coverage includes a description of the autonomic nervous system as it is affected by the condition, management of dysautonomic children, heredity, genetics, and research.

HEART DISEASE

American Heart Association. Children With Heart Disease: A Guide for Teachers. Mineola, New York (365 Willis Ave.): Author, 1971, 15 pages.

Presents a general description of the symptoms, hospitalizations, and treatments faced by children with rheumatic fever or congenital heart defects. Suggests practical ways of dealing with absences and the question of vocational counseling. Gives sources of help for medical services and includes a bibliography of teaching aids.

HEMOPHILIA

National Hemophilia Foundation. The Hemophiliac and His School. New York (25 W. 39 St.): Author, n.d. 7 pages.

A source of information for school personnel who deal with Hemophiliac children. Coverage includes symptoms, prevention of injury, and treatment in emergencies. Suggests local NHF chapters as sources of additional information.

National Hemophilia Foundation. New Perspective on Hemophilia. New York (25 W. 39 St.): Author, n.d. 6 pages.

HEMOPHILIA (continued)

Brief coverage of the symptoms and genetic pattern of inheritance of hemophilia, the latter shown traced through British royalty. Description of the work done by the National Hemophilia Foundation.

National Hemophilia Foundation. Psychological Aspects of Hemophilia. New York (25 W. 39 St.): Author, n.d. 14 pages.

Presentation of the problems of overprotection, bleeding and emotions, adaptation, risk from action, maturity, discipline, hospitalizations, treatments, and family relations. Includes a bibliography for additional information.

Vogel, James M. How to Live With Hemophilia. New York: Interbook Incorporated, n.d.

Written by a physican to explain details to be considered in the activities of daily living of the hemophiliac. Contains clear explanation of the blood factors involved and of the hereditary aspects of the disease.

KUGELBERG-WELANDER DISEASE

Muscular Dystrophy Associations of America. Kugelberg-Welander Disease or Juvenile Spinal Atrophy Fact Sheet. New York (1970 Broadway): Author, n.d. 3 pages.

Brief information on Kugelberg-Welander disease, presented in the same format as the MDAA fact sheets on Amyotonia Congenita. Offers local MDAA offices as sources of additional information.

MUSCULAR DYSTROPHY

Muscular Dystrophy Associations of America. Muscular Dystrophy Fact Sheet. New York (1970 Broadway): Author, n.d. 3 pages.

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Brief information on Muscular Dystrophy, presented in the same manner as the MDAA fact sheet on Amyotonia Congenita. Offers local MDAA offices as sources of additional information.

Muscular Dystrophy Associations of America. Patient and Community Services Program. New York (1970 Broadway): Author, 1973, 19 pages.

Detailed description of MDAA services such as testing and diagnosis, therapy, innoculations, transportation, and recreation. Lists services authorized for payment and criteria for eligibility. Includes a listing of MDAA clinics throughout the United States.

PARAPLEGIA

Bundy, Kathryn. What You Should Know About Paraplegia. Adapted from "An Introduction to Paraplegia" by William H. Edward. Washington, D.C.: U.S. Government Printing Office, n.d. 12 pages. $ .25 per single copy.

Written as a practical guide to the new life faced by a paraplegic adult, but presents information valuable to teachers or parents as well. Deals with problems like toileting, skin sores, care of feet, rehabilitation, and sex.

SPINA BIFIDA

Swinyard, C. The Child With Spina Bifida. New York (345 E. 46 St.): Association for the Aid of Crippled Children, 1971. 20 pages.

A general guide for parents, presenting symptoms, causes, treatments, and special problems. Includes clear, simple illustrations. Gives addresses for obtaining translations in nine languages.

SPINA BIFIDA (continued)

Bruce, Margaret, & Veigh, Gretchen. A Practical Guide for Parents of Children With Myelomeningocele. Pittsburgh, Pennsylvania: Allegheny County Easter Seal Society for Crippled Children and Adults, 1972. 32 pages. $2.00 per single copy. *NOTE:* Order directly from Gretchen Veigh, 1065 Findley Dr. E., Pittsburgh, Pa.

A detailed treatment of spina bifida, including numerous topics such as brace adjustment, diet, clothing, medications, exercises, education, and family relations. Illustrated with clear sketches. Included is a glossary of medical terms.